

ASHA

DEVELOPMENTAL STUDIES
OF DEAF CHILDREN



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D E V E L O P M E N T A L S T U D I E S
O F D E A F C H I L D R E N

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FOREWORD

Upon assuming the responsibilities of administrative head of the Clarke School for the Deaf on September 1, 1950, I brought with me some 10 years of teaching and supervisory experience with hearing children in public school settings but no expertise with deaf children other than living with a five-year-old daughter who was born profoundly deaf. She had been at Northampton for two school years, attending the Smith College nursery school for one year and Clarke School the second year. During the summer of 1950, it had been my privilege to have had many discussions with my predecessor, Dr. Frank H. Reiter, a psychologist and a professional educator of the deaf from whom I gained a number of insights into this special field of education.

During the first year of my administration I spent much time observing, asking and learning from a superb professional staff and the children. From those and subsequent experiences have evolved additions, changes, and some deletions which would seem to improve and strengthen the program. One appointment was that of Dr. Miriam Forster Fiedler as school psychologist, effective September 1, 1951. Another addition was the creation of a residence for 14 beginning children, Yale House, which would make it possible to admit 20 beginners in September 1951, the 6 older ones in Dudley Hall. Dr. Fiedler was encouraged to begin and carry through longitudinal studies of those 20 children. This study proceeded for seven years, through August 1958, when Dr. Fiedler left the staff to accept a position as staff psychologist for the Collaborative Perinatal Research Project, National Institute of Neurological Diseases and Stroke, U.S. Department of Health, Education, and Welfare.

In September 1961, Dr. Fiedler returned for follow-up testing

of the 19 youngsters still enrolled at Clarke School, supported by a grant from the Vocational Rehabilitation Administration. That part of the study continued through February 1964. The results of the original seven-year study, and the follow-up study involving the assistance of the Hearing and Speech Center of Johns Hopkins Hospital, are reported here.

Although neither the Clarke School professional staff nor I agree with Dr. Fiedler's interpretations in a number of instances, we believe that this is a significant study which should provoke discussion and is worthy of publication as a monograph.

At the head of the list of credits let me place the 20 deaf children, themselves. Like the other children at Clarke School, with whom I am surrounded daily, they carry their deafness and its many ramifications with grace and good humor. Of the 20 included in the study, 1 transferred to another school for the deaf at the age of 10. The other 19 went on to complete their basic education at Clarke School, leaving or graduating between 1962 and 1966. Of these, 13 went on to graduate from high schools for hearing children and 1 is still attending. Two girls went directly to business schools, one of whom was graduated from the two-year course before taking a position and the other accepted employment before graduating. Three boys took "on the job" training and are employed. Two of the high school graduates went on to business schools, from which one has graduated and the other is still attending. Five are now attending college, three of them the National Technical Institute for the Deaf at Rochester Institute of Technology. One girl, a high school graduate, is married to a hearing man. All of the 19 are now attending schools or colleges, are employed, or are married.

We are grateful to Dr. Fiedler, not only for the countless hours and days of thought and effort devoted to this work but also for her genuine warm respect for the youngsters, and her skill and insight in working with them. We are indebted to officials at the Vocational Rehabilitation Administration, now a part of the Social and Rehabilitation Service, for financial support as well as continuing interest and encouragement. We also wish to express our appreciation to Dr. William G. Hardy and his staff

at the Hearing and Speech Center of Johns Hopkins Hospital for their expert assistance; to Dr. Ira J. Hirsh, chairman of the Publications Board of ASHA, and Dr. Joseph Rosenstein for reviewing the manuscript and offering suggestions; and to Dr. Kenneth O. Johnson, Executive Secretary of the American Speech and Hearing Association, for his cooperation in the publication of this report as an ASHA Monograph.

George T. Pratt
President
Clarke School for the Deaf
Northampton, Massachusetts

December 10, 1968

EDITOR'S NOTE

Dr. Fiedler's manuscript was originally submitted in the fall of 1966, but, for a number of reasons, final editorial processing was delayed until the present. We are grateful to Dr. Fiedler for her patience during this long delay and for the opportunity to publish this timely report. The planning and preparation of this Monograph substantially antedate the term of service of the present Editor of Monographs. The attention of the reader is to be called to the designation of Dr. Joseph Rosenstein as Special Editor of ASHA Monographs Number 13.

Gerald M. Siegel
Editor, ASHA Monographs

ACKNOWLEDGMENTS

The writer wishes to acknowledge the continued interest and cooperation of all the school's administrators and teachers who have contributed to her understanding of the children, and to thank the parents of the children for their cooperation. Thanks also go to Dr. William G. Hardy and his staff of the Speech and Hearing Center, Johns Hopkins Hospital, for their generosity of time and interest in the students. Above all, she wishes to thank the students themselves, who were always so friendly and patient with her probings and who were delightful to know as they grew up and made ready to meet life in a hearing world.

INTRODUCTION

Developmental studies of deaf children have been rare in the literature on deafness compared with the wealth of such material for hearing children. The writer had the opportunity of observing and recording the development and academic progress of a small group of children over a period of years, and presents their individual histories in the hope that they will be of interest to all those concerned with the deaf child -- those who are clinicians or research workers in the field of deafness, as well as those concerned with the guidance and rehabilitation of deaf children. The purpose of these studies is to examine the longitudinal data available for the children in the attempt to illuminate the complex and idiosyncratic factors that contributed to their personality development and academic progress.

Twenty children in a residential oral school for the deaf were studied. Their development and school progress were followed over a period of seven years by means of periodic testing, observations of behavior, and collection of teachers' reports and other school records. A follow-up study was made when the children were in their 10th and 11th years of school, at which time a battery of tests was administered and school records for the intervening years were examined. Nineteen of the 20 children were taken to the Speech and Hearing Center at Johns Hopkins Hospital for detailed audiological examinations.

The resultant data are presented as case histories and organized for discussion on the basis of school achievement. Thus, the best, poorest, and average learners are discussed separately, as are the hard-of-hearing students in the group.

On the assumption that they are not unique, the experiences of this small group of children are used as the basis for discussing the needs of deaf children and their education. Thus, it should be clear to the reader that anything said about the unmet educational and psychological needs of these children will be understood not as criticisms of this one school, certainly an outstanding one of its kind, but rather as an attempt to examine critically some aspects of residential school programs for the deaf in the light of present-day understanding of child development and of early childhood education. The children's histories speak for themselves, but it is, of course, impossible to write any sort of case history without interpretation based on one's experiences, biases, and limitations.

Summary of Findings and Implications

The possible implications for educators and rehabilitation workers with the deaf are revealed in the detailed developmental studies which follow. Some general conclusions may be drawn, however, within the limitations of sample size.

(1) None of the children enjoyed the advantage of having his deafness discovered in infancy, and there was no follow-up by immediate, parent-oriented therapy, now considered the most important advantage such aurally handicapped children can have. Even today, more than 15 years later, there are still only a few scattered centers where early diagnosis and therapy are stressed. There is widespread need for provisions guaranteeing that each child be examined in the first year of life for atypical responses to sound. Adequate follow-up by a team of specialists until a reasonably reliable differential diagnosis is made involves educating the public and the medical profession to the importance of early diagnosis. Early diagnosis of deafness can be of value only when adequate therapy follows and parents are immediately given the essential guidance in ways of helping their deaf infant or young child. Regional facilities, easily accessible to any family with a deaf child, are needed so that early and intensive parent-

oriented therapy may be started, a practice which has proved extremely fruitful in some European countries and in a few centers in this country.

(2) Provisions for the hard-of-hearing child, as distinguished from the deaf child, are needed. Five of the children, one-fourth of the group, should not have been in a school for the deaf, but in a school or class for the hard of hearing. With the early training mentioned above, it is conceivable that these children might have been ready for immediate integration in a regular school, if the continued special help appropriate to a hard-of-hearing child were provided to enable him to function successfully in a class of hearing children.

(3) Similarly, appropriate educational therapeutic facilities are badly needed for the multiply handicapped deaf, whether these handicaps are neurological or emotional in basis. At least a third of the 20 children needed such remedial treatment.

(4) Marked sex differences in school achievement were found, with the boys more handicapped in learning than the girls.

(5) For those children who must attend a school for the deaf and must enter in their preschool years, there appears to be a great need to examine how such early separation from their families may best be handled and what the possible ill effects on personality development and motivation to learn may be. There were varying degrees of evidence for at least half of the children that separation trauma was involved in their developmental and learning problems. Since this study was not an attempt to study this complex problem, there can be only speculation as to the effect of early and extended separations on other children in the group. Residential schools for the deaf may need to examine their philosophies and consider some of the enlightened practices of institutions for hearing children where the children have not been harmed by such placement at early ages. Alternate plans to early placement in residential settings need to be explored.

(6) There was evidence of a great need for better understanding by educators of the deaf of the significance of developmental stages of growth and of the role played by emotional factors in the learning process. Some of the children did not appear ready for

formal learning situations on school entrance. Others, because of unmet emotional needs and anxieties, were unable to benefit from the program offered. The same might apply to any group of children, hearing or deaf, in any school; but for those who must struggle to learn language without hearing, it appears especially important that they not be further handicapped in personality and emotional development. Some limited evidence indicated that deaf children, long before they can communicate verbally, can be understood through and benefit from therapeutic play sessions. More study of the needs of the deaf child for such therapy and of ways of providing it within the school setting is very much needed.

(7) Similarly, more needs to be known of the language-learning problems of the deaf, particularly the extent to which they are peculiar to deafness, and to that extent they are part of the problems of all under-achieving children. It seems that educators of the deaf might take more advantage of all today's newest knowledge about how children learn; about the nature of the learning process itself; about the offerings of the field of psycholinguistics; about the many new approaches of teaching reading and ways of helping poor readers; and especially about some of the programs for culturally deprived children, some of whose learning problems seem remarkably like those of deaf children. Curriculum and methodology for the deaf need to be examined critically, without the old controversy between manual or oral methods but with the teachings of child development, linguistics, learning theory, and the dynamics of behavior very much in mind.

In order to put such teachings into effect and to help devise experimental and imaginative ways of teaching the deaf child, the training of teachers of the deaf should be permeated with an understanding of the dynamics of behavior and the relevance of developmental stages of growth to curriculum and methods, and with a willingness to forego old methodological rivalries for an experimental frame of mind. More money and expertise should be placed in psychoeducational research to enrich teacher training programs. The fact that about half of a group of children in a very good school for the deaf are five or more years retarded in educational achievement should stimulate much thought. There exists no convincing evidence that deaf children need to be educationally

retarded to this marked extent; in fact, there is considerable evidence in individual histories that retardation can be minimal under optimum educational and psychological circumstances.

Chapter 1

PLAN OF THE STUDIES

The Subjects

In the fall of 1951, 20 children entered the three youngest classes in a residential oral school for the deaf, among a larger preschool/lower elementary school group of about 70 children. They ranged in age from four years, four months, to five years, seven months, and in severity of hearing loss from hard of hearing to profoundly deaf. The socioeconomic status of their families, judged by fathers' occupations, ranged from professional to unskilled laborer. As far as can be ascertained, the 20 children differed in no obvious way from previous classes nor from those who entered the school in the years immediately following. There were no clearly defined selection criteria used for admission to the school. Most of the children and their parents had been interviewed by the director of the school, as well as by the supervising teacher of the beginning classes who elicited samples of speech and auditory responses from them. A brief developmental history of the child was also obtained. No standardized tests of intellectual functioning or of any other kind were used as a basis for selection at that time. The policy of the school was to admit those children who had no severely handicapping condition other than deafness, and who might be expected to benefit from the school's program. Within the limitations of selection and prediction of academic aptitude of very young deaf children, it can be assumed that the 20 children are a fairly representative sample of any children with defective hearing who might have entered any similar oral school for the deaf at that time.

The School Setting

From the beginning, the school stressed purely oral methods of teaching, with consistent discouragement of communication other than by speaking, reading, and writing; and there was particular emphasis on speech and auditory training in the early years. Classes were ideally small for this, with seven or eight children and sometimes fewer. Normally, the children remained in the preschool/lower primary section for five years and then moved on to spend four years in the middle elementary school division. They progressed from there to the upper elementary school from which they graduated after four more years. Rate of progress varied from child to child, but the children who progressed normally from year to year spent 13 years in the school, going on then to regular secondary schools if they planned to continue their formal education. Nine of the 20 children advanced through the school at this expected rate; 5 remained an extra year, and 1 for 2 extra years; and 1 left at the end of his first 5 years. On the other hand, 3 students graduated after 12 years of schooling; 1, after 11 years.

The children lived in dormitories according to their age and school placement. They were brought to the school on Sunday by their parents and left there. Parents were instructed to return for visits only after a lapse of at least three weeks, an admission policy since modified. Fourteen of the children lived the first two years of their school life in a small house adapted for preschool children with the same teachers and supervisors. The preschool house was an attempt to make adjustment to residential school living easier for the younger children by providing living conditions somewhat more intimate and informal than those of the larger dormitories. Boys and girls had separate sleeping and toilet facilities, but were integrated for meals and play.

The remaining six children entered a larger dormitory containing the next age groups. The dormitories for the middle children and those in early adolescence contained 30 to 40 children.

In all the dormitories the children ate most of their meals with their teachers, an arrangement considered an essential part of the educational program. Except for mealtimes, extracurricular hours were supervised by middle-aged women, with one or more always in attendance, indoors or out. Similarly, the supervisors of the adolescent boys were women, as were most of their teachers, except for one or two teachers or directors of sports and shop activities. Thus, it was not until they were older that the boys in the school had many contacts with men, and even then the contacts were limited. This was not the deliberate policy of the school, which sought to engage more men in the teaching of the deaf, but was, no doubt, due to the same factors that make our elementary schools for hearing children so dominated by women. The dearth of masculine companionship and leadership for the boys was even more to be regretted, since daily home relationships with fathers and other masculine figures were also lacking.

Tests and Observation Techniques Used

First Seven Years

Since the writer began employment in the school the same fall (1951) that the 20 children arrived, they became the focus of her interest. Her aim was to explore the development, particularly personality growth, of deaf children through the study of play sessions material and of painting and drawing behavior, and by observing behavior in formal testing sessions. Such projective techniques had long been used with hearing, verbalizing children with fruitful results, but their potential for application to nonverbal children was relatively unexplored.

During the writer's seven years in the school, as much information about each of these children was gathered as time and personnel permitted. Each child was seen for regular testing or observation sessions about once a year, teachers' ratings and reports were gathered for study, art products were collected, and parents were

interviewed whenever possible. Some inevitable gaps occur in the histories, since lack of staff precluded home visits and a closer acquaintance with parents in home environments. The case studies are primarily school-centered, with information about vital home influences gained through occasional direct conferences with parents, or indirectly through impressions and opinions of teachers and other staff. Thus, the longitudinal studies presented here should in no sense be considered as ideally complete and rich in detail. Incomplete as they are, though, the information and insights they offer should be useful to those who are concerned with the welfare of deaf children.

The sources of information on which these case studies were based are summarized as follows: (1) Parents' responses to a questionnaire concerning their children's preschool years. The questionnaire was sent during the first year of the children's school life (see Appendix A). This was supplemented by information gathered during their visits to the school. About half of the parents stopped by, a few others were met sporadically, and there were five parents that were not seen at all. So there is considerable variation in the writer's knowledge of the children's home backgrounds and experiences as reported by their parents.

(2) During the first year of school each child was tested at least once with two nonverbal intelligence tests, the Leiter International Performance Scale and the Goodenough Draw-a-Man Scale. The Performance Scale of the Wechsler Intelligence Scale for Children (WISC) was administered to each child at eight years of age. The Bender Visual-Motor Gestalt Test (1938) and the Marbleboard Test (Strauss and Kephart, 1955) were also administered. The Goodenough Draw-a-Man Test was repeated at each testing session and other drawings were obtained whenever possible or available. During their first five years of school many of their easel paintings and drawings from regular art classes were collected and later studied by a research assistant who was both a teacher of art and psychologically trained.¹ Several play sessions

¹Marie Turbow Lampard, M.A.

with the MLT (Miniature Life Toys, Murphy, 1956) and at least two play sessions with the World Test (Buhler, 1951) were held with each child in his early school years. Those children who presented serious behavior and learning problems were observed in more frequent play sessions. Two boys, in particular, were seen weekly by the writer and an assistant within a two-year period.²

The Follow-Up Study

The children had completed seven years of schooling when the writer left the school. Nineteen were still enrolled in the school, and one had entered another school for the deaf. Three years later a return was made to the school for follow-up testing of the students. Each student, 14 to 15 years old, was examined with a battery of tests consisting of the complete WISC, the Draw-a-Person Test with accompanying stories, and the Rorschach Test. (See Appendix B for directions and special adaptations of these tests.) The writer administered all tests, but consultants were used for analysis and interpretation of the figure drawings and Rorschach records.³ Copies of teachers' reports, Stanford Achievement Test scores, and other pertinent information were collected from each student's school records in 1962. At this time, the 19 students were taken to the Speech and Hearing Center, Johns Hopkins Hospital, for detailed audiological examinations. (The 20th student chose not to go.) Later, information concerning the projected time of each student's graduation from the school and his after-school plans were obtained. Hospital birth records for 15 of the children were obtained at a later date.

The resultant data for the 20 children are presented in the form of developmental case histories based on school achievement. In analyzing the deaf children, emphasis is on the advantages common to the best achievers and the characteristics of the poorest achievers. Hard-of-hearing children are treated in a separate

²Richard E. Thompson, Ph.D.

³Selma Landisberg, Ph.D., and Richard Brodie, Ph.D., respectively.

Table 1. Students grouped by levels of achievement.

Achievement Level	Name	Stanford Achiev. Tests No. of years retarded			Wechsler Scale			Hearing* Loss dB
		Battery Median	Par. Mng.	Word Mng.	PIQ	VIQ	Vocab. Wtd. Score	
Best group	Joan	0	1-10	3-0	132	96	8	68
	Ted	0	0	4-4	121	97	9	90
	Rita	-6	2-7	3-9	142	92	6	90
Average group	Brenda	2-1	2-11	3-3	114	91	6	87 Dys.**
	Lucy	3-5	3-4	3-11	107	96	8	63
	Vicky	3-6	4-11	4-11	113	81	5	88
	John	3-8	4-6	5-5	94	76	4	73
	Louis	3-9	4-6	7-3	127	77	4	85
	Cathy	3-9	3-2	5-3	135	82	7	55
	Judy	4-3	5-6	5-8	101	77	1	85
	Joyce	4-4	4-10	6-6	104	75	4	82
Below Average group	Wendy	5-1	5-8	7-3	103	72	4	96 Dys.
	Leona	5-2	6-0	6-9	99	71	3	81
	Tony	5-2	6-2	5-9	111	61	3	88
	Mary	5-5	6-5	7-3	124	76	4	65
	Carl	5-5	6-1	6-6	124	63	2	97
	Doug	5-9	7-9	8-5	97	63	0	88
Poorest group	Tim	6-5	6-1	7-2	113	53	0	81 Dys.
	Matthew	6-5	7-2	7-9	90	56	0	96 Dys.
	Dan	6 to 7 years	--	--	104	50	0	?

*Average of tones 512-8000 for better ear; ASA (1951) reference level
 **Diagnosed as dysacusic by Johns Hopkins examiners

section. Table 1 presents groupings of the children according to school achievement, including their WISC scores and hearing losses. A brief section summarizes the audiological findings reported by the Johns Hopkins University group, which are also incorporated in the individual discussions. Tables of complete test scores are included in Appendix B, with a short summary of statistical findings for those interested in the predictive powers of various tests and their intercorrelations.

Chapter 2

THE THREE BEST ACHIEVERS

The 20 students were listed in Table 1 in order of achievement from best to poorest, as estimated by the battery median score of the Stanford Achievement Tests, giving the years of educational retardation represented by the difference between their chronological and educational ages. As the table reveals, three individuals were not retarded academically: one boy and one girl profoundly deaf, and the third a girl who functioned as hard of hearing. The latter girl, Joan, is discussed first.

Joan

Recognized as a superior student from her earliest days in the school, Joan graduated from the school at the age of 15 and entered a regular high school. She showed no educational retardation in her median achievement score on the Stanford tests at this age, scoring at the 10th grade level, but there was some language retardation evident in an 8th grade level score for paragraph meaning and 7th grade level score for word meaning. Joan was a highly intelligent girl, and, as the following report from the Johns Hopkins examiners indicates, she functioned well as a hard-of-hearing individual.

Subjective audiometry records only the most consistent, not the best, levels of response. Relative to her speech-hearing, these levels are not believable. The GSR levels

are. Without her aid, she has an SRT for double digits of 64 dB; with her aid in the right ear, she has an SRT for spondaic words of 42 dB. She uses the telephone on the right side. Her voice is fairly well monitored, with good stress and rhythm patterns. This is a moderately severe hypoacusis. She functions essentially as a hard-of-hearing child. (See Figure 1.)

Why, then, did Joan spend 11 years in a school for deaf children? Looking back into her early history one finds that professionals who first examined Joan believed that she was a good candidate for a hearing school. She had not been born with defective hearing, but had suffered an attack of meningitis at two years, after she had started to talk in brief sentences. There is no record that Joan wore a hearing aid before she was about three and a half, but she had early speech and auditory training several times a week. Her teacher at that time felt that she could go to a regular school. The fact that her mother did not have time to work with her at home, however, led the teacher to recommend that Joan go

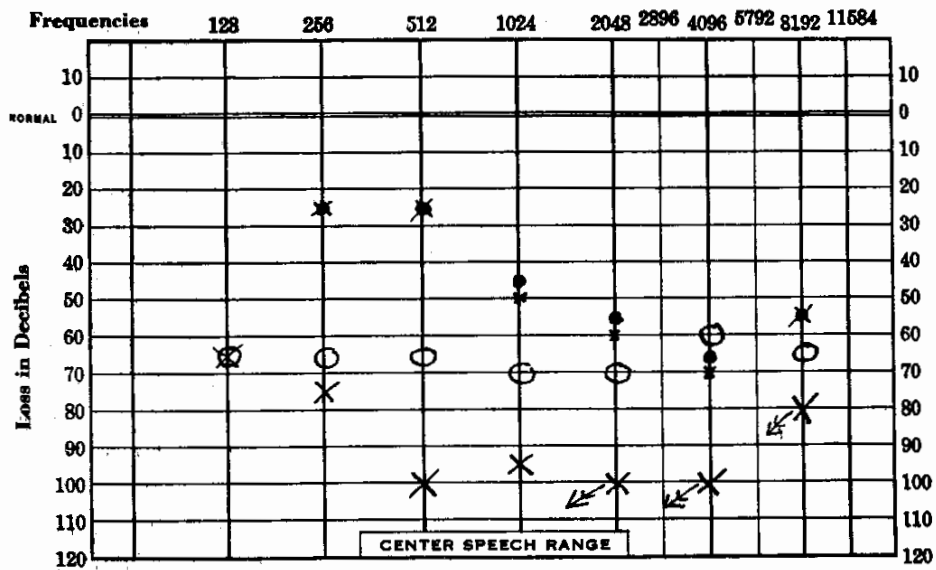


Figure 1. Joan's audiogram.

to a hearing school only after a few years of special education. Joan did not get to a hearing school until she was 15. The reasons given by the school centered around her personality; it was felt she was too shy and timid to be able to get along as a handicapped child in a regular school. There was undoubtedly some truth in this. Joan was a rather shy child, but only with adults; and with some supportive guidance she might have made the adjustment without too much stress. It is particularly regrettable that she did not try this earlier step into the hearing world, since her school achievement at the age of 11 was at fifth grade level. Her speech was always quite intelligible and her written language long before this age was extremely fluent. As her teacher wrote of her at the end of her fifth year in school:

Joan has a marvelous ability to express oral language and I feel that she does a better job on the whole than many children with perfect hearing. I am convinced, however, that Joan has more usable hearing than her audiogram seems to indicate, for she responds so naturally when she isn't even looking at the speaker and she uses language as her very own that she has heard from her hearing associates. Joan's written language is every bit as good as her oral expression of it. She is original in what she writes and seldom has an error of any kind.... She does a very good job in all reading skills on her level and will always be a good reader and one who gets real pleasure out of it.... An unusually good lipreader, both in rapid conversation and reproduction.

Joan now has an almost one hundred percent score for accuracy in giving back auditory training exercises.... She loves using her hearing and often says, "I heard you!" when she is away from me in the room and not watching my lips. She can usually repeat word for word and use the same inflection that I have used.

Joan is a wonderfully well adjusted child. She has a great deal of native ability mentally and an enviable ability to get along with her peers both young and old. Everybody loves the child because she is so capable. I have trouble remembering that I am teaching a deaf child because she is so much like a very well-adjusted hearing child.

At the age of 10, then, Joan did not appear to be a child who would have had great difficulties in a regular school. Similar reports followed her progress through the school, with promotions to classes of children who had entered school before she had. Reports of shyness continued but apparently only with adults, as

she was a leader among the children. As the summary report when she was 12 read:

Her voice is weak -- the voice of a timid child. We've worked hard to get her to speak up! Her school work has been of superior quality.... In fact several of her teachers have called her an "ideal pupil".... Joan gets along well with everyone but her biggest problem seems to be timidity.... She is ill at ease socially with most adults (likes men better than women) although the children report she is a clown and somewhat bossy when not in the presence of the teachers.... I think she has qualities of leadership if she can learn to project herself a bit. I recommend an enriched program for Joan, so that she may move into a school with hearing children as early as possible.

As a girl, shyness might not have been too great a handicap to regular school adjustment, especially as Joan was attractive. With the help appropriate for children with hearing problems, she might have made a fairly easy adjustment to a regular school, especially as the school system in her home town was a good one and she was near a metropolitan area where special help was available. Joan's life as a small child should also have helped her to attend public school, as she had had a normal, healthy life with hearing siblings and many hearing friends with whom she got along well.

Joan's superior mental abilities might have helped her make this adjustment also. She had always functioned as a child with superior intelligence on standard tests, with IQ scores in the 130s on Leiter, WISC, and Goodenough Scales.

Probably because of her shyness in the presence of adults, her behavior in play sessions was less impressive. Her play with the MLT and World Test toys was usually circumscribed, rigid, and uncreative. Toys were used in a precise, orderly fashion suggesting considerable anxiety, but also undoubtedly reflecting the qualities of character that helped to make her an outstanding student. (Teachers always spoke with praise of her neat, careful work, her attention to detail, her conscientiousness.)

Whatever degree of anxiety these play sessions may have reflected, it was not crippling. When she was 15, her Rorschach record showed fairly well integrated ego development with ability to use varied intellectual adaptive techniques. It was an

essentially healthy record. There was a suggestion in it, however, that she felt somewhat defective (a feeling not noted in most of the Rorschach records of the group) and it showed considerable anger. It is interesting to note that anger is seen in this record and in that of another hard-of-hearing, highly intelligent girl (Cathy in Chapter 5). One speculates to what extent this may have reflected the prolonged stay in a residential school with much more severely handicapped deaf children, for a girl who could function freely in a hearing environment. Certainly, her adjustment to school living was always outwardly good. Joan's figure drawings also suggested that she was very self-conscious about her deafness and unsure of her acceptability, but that she was fairly well adjusted, if rigidly controlled.

The art work of her first five years in school reinforced the picture of compulsive neatness and an anxious quality about everything, with great intensity of feeling. "She can't 'let go,' be emotionally spontaneous, but is very tight, controlled, constrained." Thus, while Joan was certainly not an emotionally disturbed girl, she might well have benefited from some supportive therapy in handling her anxieties and "shyness," thus making possible an earlier shift to a hearing environment.

Here, then, was a child of superior learning capacity who needed appropriate opportunities as a hard-of-hearing, not a deaf, child. Hypothetically, such education and early integration into a regular school might have prevented both the postponement of her entrance into high school until the age of 15 and the language retardation suggested by her Stanford test scores.

In marked contrast to Joan, the other two top achievers were profoundly deaf individuals who were not recognized early as outstanding students. Both, in fact, had considerable difficulty in their early years with speech and lipreading, and it was not for a few years, when other aspects of achievement became important, that their superiority was gradually revealed to their teachers.

Rita

Rita, like Joan, was deafened by meningitis at the age of two. Before that time her language development had been considered to be about a year in advance of her age. After the onset of deafness she had considerably more preschool training than most of these children, with Tracy Clinic materials as well as two years of daily attendance at a preschool for deaf children. Her parents reported that she rebelled against these early rehabilitation efforts, refusing auditory training and finding it easier from the beginning to match the printed word to objects rather than the spoken word. Rita was profoundly deaf, with an estimated loss of about 100 dB for speech on her school entrance. Her Johns Hopkins examination summarized:

This is a profound neural hypoacusis. We have known this girl since 1949. The test picture dated in 1950 is essentially the same as this one. Her aid is very much a part of her, and she depends on it for alerting and whatever auditory support she gets in conversation. With it, she is aware of acoustic stimuli at about 46 dB, but gets no clear discriminable information. Her voice is "deaf"; quite prolonged in time, so far as articulation is concerned. (See Figure 2.)

For a long time after entering school Rita was a very silent child, and in the first months of school she was considered by her teacher the least mature of her group. During the same period, however, in her art work and in the use of the play sessions Rita appeared as one of the most mature and creative of the total group. From the very beginning her art work was unique, with "a Rita" as recognizable as a Picasso or a Braque. The summary of her early art work described her painting behavior as thoughtful and "intellectual," with great interest apparent in form and content. Similarly, in her first play session when just five, she used everything in a functional way, with a great deal of human activity. As her play was summarized at that time:

Gives impression in play as in paintings of great potentialities. Evidence of rich inner life. Needs opportunity and materials for creative activity, for expressions of feelings. Her teacher says she is "stubborn" because she resists speech, etc. (A healthy resistance to adult domination?) Tiny girl but mature -- needs chance, if possible, to decide things, to be independent. Danger: of too much adult pressure leading to more withdrawal.¹

A few months later Rita produced a drawing of a man which scored with an IQ of 181 on the Goodenough Scale. Her later mental test scores never reached quite such heights but were always in the very superior range, with her final WISC Performance IQ 142, Verbal IQ 92.

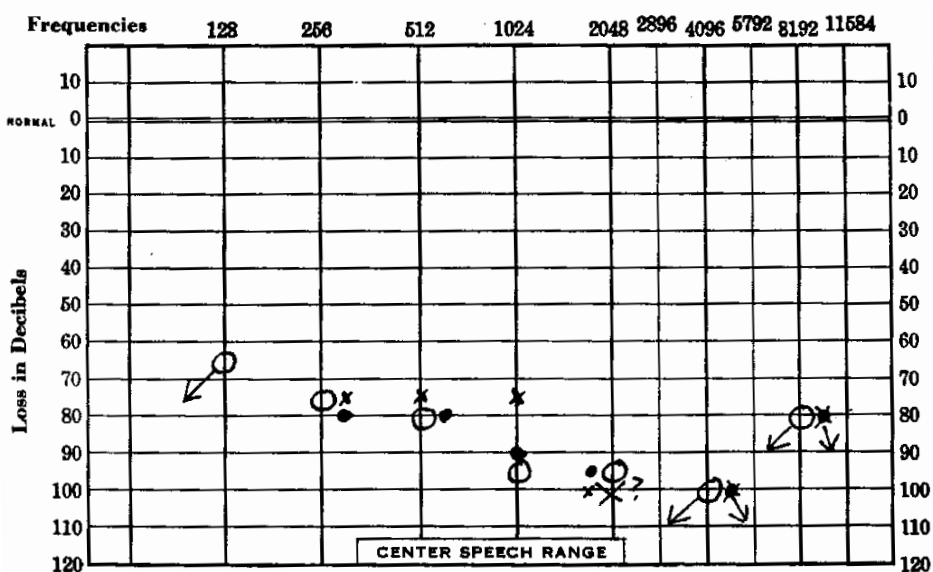


Figure 2. Rita's audiogram.

¹Reports of psychological tests and observations always mine unless otherwise indicated.

Rita for some time resisted both auditory and speech training and was described by her teacher as

...the only child I ever taught who used no voice either in laughing, crying, or trying to speak. Absolutely no vocalization for two months, even when with her family. About November someone hit her and she cried. From then on speech came slowly but with pleasant voice quality.

It is easy to see this early resistance, of course, as Rita's way of dealing with separation from home and with the many new demands for adjustment in school and in residential living. This was undoubtedly particularly difficult for her as she came from a rich family life, with considerable freedom of behavior allowed and many opportunities for an active life with siblings and neighborhood friends. Rita entered school when she was 4 years, 9 months. Her very perceptive mother vividly described Rita's reactions when she returned to the school to see her after the required three weeks' absence. Rita just stood on the stairs and looked at her parents, soberly, with no rushing to greet them, no quick responses of delight. Her mother interpreted this behavior quite rightly as expression of Rita's reproach and anger with them for "deserting" her. It is a familiar reaction of children hospitalized and similarly "deserted" (Robertson).

It was not until her third year in school that a teacher spoke of Rita as an outstanding student and she slowly came to be recognized as a profoundly deaf child who was going to be a superior achiever. At the end of her fifth year in school her teacher wrote:

Rita has a little more difficulty with lipreading than some other members of the group, but I believe this is due to the fact that her imaginative trend carries her away very often when you are trying to get her to concentrate on your lips.... She is a very careless speaker... and often cannot make herself understood, much to her disgust.... Rita reads with good understanding and she loves it. She gets hidden meanings more accurately than any other child in the class.... She seeks reading as a pleasurable pastime more readily than any other child in the group. Rita is a most interesting child. Possessing a very imaginative mind along with plenty of ability to think and reason, she can usually do a splendid job of thinking when she is held to it. She is quite stubborn at times.... In other words, she is an individual and proposes

to remain as such. So far as living entirely in her own dream world and telling imaginative stories to make her dreams come true, I think that Rita has shown definite maturity this year and I can see a real improvement in her willingness to face facts and accept the responsibility for the results of her failures to adjust properly with those with whom she is associated.

Like many creative children of high intelligence, Rita made up wonderful tales of things which never happened except in her imagination causing some undue concern with the moral aspects of this imaginative activity. It seemed to the writer that this capacity of Rita's was never capitalized on in the educative program of the school; rather, it was Rita who was expected to "improve" and conform. It is also likely that her great love for reading might have been encouraged earlier in her school career, with less pressure for speech which was difficult for her and which developed rather slowly. It should be emphasized here, that a love of reading and success in its skills characterized the progress of all three of these good learners. As was written of her when she was almost six, after a World Test play session:

As in her session with similar materials last year, Rita is revealed as a very mature little girl who gives evidence in her play of a rich inner life of imagination and thought. Her play was quiet and absorbed, with little interest shown in construction and overwhelming interest in human beings and their activities. In her World people move and do many fascinating things -- the World is full of family and social activity.

Rita has always seemed a little girl who needs much opportunity for creative expression and free expression of feelings. It is disturbing to see a child of her giftedness so inhibited as in the mental testing situation -- so afraid of doing something for fear of doing the "wrong" thing.

This inhibition is seen in the report of her Leiter test at the time.

Rita found it difficult to function in the testing situation. She was very slow and cautious and wanted approval for each step she took before she could proceed. It was almost impossible for her to proceed without reassurance from the examiner.... This test may well reflect a very minimal estimate of her real capacity, as is suggested by all her art work.
(IQ 122)

Inability to function freely in a testing situation was more marked with Rita, but it appears characteristic of young deaf children, particularly those who have had considerable preschool training. It has often seemed as if it must be a reflection, at least in part, of the way they are taught, with the emphasis on getting everything just right and the need to watch the teacher so closely and to be rewarded with the nod of approval (or the frown of disapproval). Experienced educators of the deaf have warned against such too early, too formal teaching of speech (Cohen, 1964; Galbraith, 1964; Kent, 1962; McLaughlin, 1960).

Over-dependency has also been noted by many investigators as characteristic of the adolescent deaf. Perhaps it is inevitable with any method of teaching, but it appears that this danger of making young deaf children overly dependent on adult approval for speech production is something of which their teachers should be aware. They need to seek ways of offsetting it, to find ways and means of encouraging the deaf child to be independent and self-confident, to build up this confidence through equally enthusiastic approval for other more free-flowing activities than the inevitably halting speech of the classroom. Rita, for instance, communicated vividly and clearly in her drawing and painting and was outstanding in this achievement, but there is only the briefest mention of it in any of her school reports.

It is interesting to note that the independence of spirit and the involvement in fantasies continued to be noted by Rita's teachers and usually not in favorable terms. Considerable effort was expended to teach her what was "true" and "not true." Such independent and imaginative activity are often characteristics of the bright child and have a very positive value, but often, unfortunately, they are not fully appreciated by the teachers of such children, hearing or deaf, in the rather rigid confines of most educational systems. Rita obviously had great strength of character, and fortunately she did not lose these qualities as she grew older. Rita had her difficulties along the way, however, as reported in teachers' reports of her middle school years.

Rita is one of the most frustrating and upsetting children I have ever taught. She lives in a dream world, apparently

completely oblivious to what is going on unless she is constantly called to heel. She is an individualist and so completely self-centered that she either pays no attention at all or wishes to monopolize the class with lengthy tales from her own experience.

As her supervising teacher summarized her efforts when she was 13, however:

When her attention could be gained, however, there was no question as to her ability to grasp ideas. She had an inquiring mind and asked many excellent questions. Gradually during the second year with us she became interested in learning, but even more interested in going off on a tangent and reversing the teacher-pupil role.

Somehow, one has to admire a profoundly deaf child who can "reverse the teacher-pupil role"! Finally, the year when she was 13:

Rita has made great gains this year both socially and scholastically. She has seemed to us bent on self-improvement in all lines this year -- personal, in speech and in language. She doesn't seem to resent help any longer, but immediately accepts suggestion and puts it to work. She is more cooperative and compliant in the group, without sacrificing any of her own individuality.... She still has a charming way of diverting her teachers on occasion from the essential point to some tale of her own! But when the teacher can control this habit, Rita is one in a hundred.

The following summer Rita attended a summer school conducted under the supervision of a local university's school of education, and this report of Rita's adjustment was made.

Rita has been an interested, active participant in the summer school session. She has made new friends and has adjusted to the new school quite well. After the first week or so, she no longer depended on her brother to help her. She stated that she did not need his help. Rita is a bright child. She is especially imaginative and creative and has done an outstanding job of writing stories and poems. Rita has expressed a great interest in the social studies. She has done projects and has received above average grades on her test work. Rita has done very well in all math work. Her tests have shown that she has grasped the new concepts adequately. Her comprehension of difficult reading material needs to be improved as does her rate of speed. With easy reading content, she does good work. Her written work is carefully and

efficiently done. She writes well and has no trouble with spelling. Rita has shown average interest in science. She has scored slightly above average and has done a good job in all she has attempted.

It should be emphasized that this is an account of Rita's achievements in classrooms of hearing children.

Rita continued to do excellent work in the upper grades of the school for the deaf, but with continuing complaints that she was often impatient and resented having to "dig in" or do "the menial part of work, as in writing science reports," finding it hard to see that one could not skip from sixth grade math, say, to questions of algebra, as she wished. One perceptive teacher suggested that her behavior might be the result of "boredom." Many of the complaints are familiar ones from teachers concerning bright children, complicated in Rita's case, of course, by the necessity for her to "dig in" and master new language and vocabulary. When last seen Rita was planning to go to an art school after high school. Her figure drawings at the ages of 14 and 15 were charming, as usual, with the "Rita" line easily recognizable. Unlike the drawings of most of the students, they were small works of art. The analyst of the drawings commented:

Very gifted, poised, gracious. Have a sweet, wistful quality. She is able to sublimate. Lives in a sweet feminine, gracious world.... There is a certain loneliness too....

Rita finally graduated a year earlier than most of the group, but this acceleration was only because of her parents' insistence, as the school considered she needed another year there. She entered her home town high school where she was reported as getting along well.

Ted

Like Rita, Ted was a high achiever who made a rather slow start in school. He was profoundly deaf from birth, and was also

somewhat handicapped by visual problems in his early years until properly prescribed glasses were obtained. Except for his deafness, his birth and early development appear to have been normal, with no serious illnesses or behavior problems. He had early training from about the age of two and a half with the Tracy Clinic home course and had attended a day school for the deaf for one year before entering the residential school. As with many of these children, his mother found that his most difficult emotional adjustment had been that of adjusting to living away from home from the age of 4 years, 11 months. He could read lips a bit and say a few words at that time, but his first years in school were marked by much the same sort of problems Rita had -- poor response to auditory training and poor speech. Ted also was a profoundly deaf child, as his Johns Hopkins examination confirmed.

GSR: conditioning very slow, with slow latency and rapid extinction. This boy has a severe and distorting hypoacusis. Without his aid, he has an SRT of 90 and 80 dB for the right

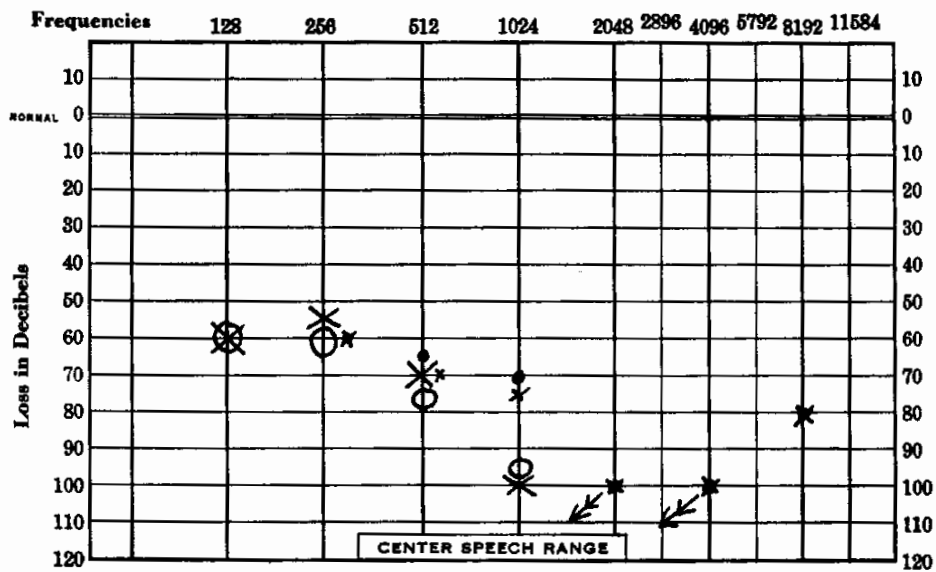


Figure 3. Ted's audiogram.

and left ears respectively. With his aid, he is aware of speech at approximately 50 dB, but the information is too distorted for auditory patterns without vision. He is oral-deaf in function, far better with his aid. (See Figure 3.)

Like Rita, he showed an early interest in books and reading. He had Childcraft books at home and a picture dictionary in which, at an early age, he spontaneously looked up words. He also expressed himself well through drawing, revealing, as did Rita, a superior fund of ideas that could not yet be expressed through speech.

Ted's play sessions in his first year at school were active, full of boyish, aggressive play with animals and cars, lots of expressive drama and noise, much freer dramatic play than most of the children his age. To the observer he appeared to need more opportunity than he had at school to use space and big toys, and to have lots of rough outdoor play. He was friendly towards the observer and not at all concerned with her reactions to his aggressive play, i.e., he seemed to function freely, without anxiety. Two years later, when he was seven, his play was much more confined and rigid. Concerning this marked change in behavior the observer asked the question: was it a developmental change, i.e., being seven instead of five, or did it reflect experiences of residential living? This change was one noted to occur with most of these children. In comparable play sessions held with about 100, 7- and 8-year-old hearing children, the rather precise and limited play with the World Test toys seemed to be characteristic of hearing girls of these ages but not of the boys. It seemed possible, therefore, that the deaf boys' rigidity in play might well reflect learning situations, where precision and accuracy were emphasized, as well as the inevitable rules and restrictions of residential group living, usually harder on boys than on girls. For the young boys in the school also, it should be added, these restrictions were part of their being taught and supervised only by women, as compared with hearing boys who had fathers and other masculine contacts in their homes.

When Ted was seven, two visiting psychologists observed him

in an MLT play session.² One commented that it was "natural to find the rigid, structured building, as children are quick to reflect environment. But if the play is free and creative, there is nothing to worry about -- no inner constriction." One also commented, noting Ted's active play, that he seemed to have much need of opportunity for motor activity, and concluded: "My, this is a gifted little boy," with a tremendous flow of ideas -- creative, original, expressive. "I would think much of this play would be good for him." Unfortunately, Ted did not get much more of it, since he did not present any serious behavior problems to the school, and opportunities to provide such play sessions for the young children were limited by lack of time in their school schedules.

During these years Ted was progressing in school at a steady pace but considered just an average learner. His teacher's report at the end of his fifth year read, in part:

Ted makes a good social adjustment in a very modest and unobtrusive manner. He is not an aggressive child, yet he carries influence within his own group and with all his associates. He is a very sensitive little boy, but quite emotionally stable, I feel. While he likes reassurance quite often, he has the ability to act and proceed as an individual.... He learns slowly but surely.

Eyesight difficulty still takes its toll for Ted in his lipreading ability although there has been a change in his eye glasses that I think has helped his vision some.... Ted's speech is not always intelligible but he tries very hard and has a wonderful attitude toward correction and toward hard work for improvement. He uses very little inflection and his expression of speech is quite labored. He enjoys talking, however.... Ted is a very deaf child and while he cooperates in all Auditory Training exercises he has real difficulty giving back much that he receives through the ear, even from pulsations. Ted is a good reader and loves it.

Ted, like the other two top achievers, was also outstanding in his reading ability and interest in reading. The school years when he was 10 to 14 were marked by similar reports, with notes on his labored speech, poor lipreading skills, and for several years his

²L. Joseph Stone, Ph.D., and Lois B. Murphy, Ph.D.

"silly" behavior, what one teacher described as his "push-and-pull-and-shove idea of play," behavior familiar enough to those who know preadolescent boys.

He was recognized as an able student in his middle school years, however, with the following summary report of the past three years when he was 14.

Ted's participation in class work was adversely affected by his foolish behavior during the first two years in the department. His written work was of very poor quality and he was lazy about homework and careless in his use of English.

During this period he was an avid reader, however, and an avid collector of words and ideas as well as of things. His interests were varied and they changed from time to time, although from teachers' reports school work appeared to suffer while he collected rocks or nursed turtles!

His outside reading constantly "paid-off." He would often be the only child in the class who already knew the new vocabulary in a geography lesson, for instance. Such a word as textile, we expect to have to explain, but Ted knew it the first time it came up. This sort of thing happened constantly.

In the third year, Ted began to grow up. He had built up a backlog of information from his voluntary reading that began to be quite useful to him in class and eventually helped him to overcome his childish behavior. His lipreading ability improved... he began to be a leader in his class and in the playroom. His class work improved in all factual fields.... Ted has had a very good year. He has developed good study habits. His reasoning ability is good. He is interested, ambitious and hard-working. He has continued to read a great deal and he knows a great many facts. However, he still finds it difficult to put these facts into good English and then to express them.

We can sense a process of self-education, then, going on with this intelligent boy with his rocks and his turtles and his books.

Ted had never tested as high as the two girls on standard tests, but he was always in the superior range. His final WISC examination when he was just 14 produced a Performance IQ of 121, Verbal IQ of 97, the latter the highest of his group. The examiner's summary of this session read:

Ted was about the pleasantest surprise which I had on this visit. In contrast to the shyness and self-consciousness as well as inarticulateness, of his earlier years, he now appears as a self-confident and poised young man. His language ap-

pears to be excellent although it is often difficult to understand his speech. He now seems aware of his abilities, saying that he plans to go to college and desires to be (1) a geologist or (2) a meteorologist or (3) an engineer.

In contrast to most of the students tested, even those with considerably more hearing, Ted did unusually well on the verbal part of the examination. His fund of information was excellent and his ability to generalize above average. His verbal IQ was superior to most of those of the graduating classes tested in previous years. Interestingly enough, despite his superior language and obviously excellent vocabulary, Ted scored low on Vocabulary (weighted score of 5), as do all of the students tested.

Ted's Rorschach also was one of the superior ones. It was a productive record with many and varied responses, and gave a picture of a highly motivated and well-integrated boy.

When he came to graduation at the age of almost 17, Ted's speech was still rather difficult to understand and he had trouble with lipreading. But he also had a tremendous vocabulary and breadth of interest achieved through reading. He graduated a year before the main body of his group. He took the Differential Aptitude Tests for private school entrance, scored in the 90th percentile in verbal and numerical skills, and entered a private school for boys the next fall. Whatever his problems of classroom interest and attention may have been, his process of self-education had certainly "paid-off." We saw something of the same sort of insistent individualism in Rita; less in Joan who was always the "ideal," more docile pupil. Both of these bright, self-motivated students might well have benefited from the sort of creative education that has been successful with highly intelligent hearing children, i.e., the opportunity to collect rocks and nurse turtles, if you will, as an appreciated and integrated part of the educational process.

Discussion

The records of these three excellent students reveal certain contrasts but also several factors in common. There is the contrast,

mainly, of the hard-of-hearing student with the two profoundly deaf ones. In common they had the advantage of superior intelligence, but they shared this advantage with several of the poorer achievers. All three students came from comfortable middle class homes with no known environmental handicaps. The two girls grew up in homes where they were encouraged to lead healthy, normally childish lives, mingling freely in their early years with hearing children. The boy had, perhaps, somewhat less rich experiences in the hearing world but enjoyed the exclusive attention in his preschool years of a mother who encouraged his curiosity and stimulated his intellectual interests. All were started on speech and auditory training in their third year of life or earlier, but so were many of the poor achievers.

As in an earlier study by the writer (1957) of a larger group of poor and good learners, two of the three here were apparently free from handicaps other than the defective hearing. None showed on examination any problems of perception, or of transmission or association processes of language learning. Ted's visual problem may have interfered with his lipreading and speech, but it was not handicapping for reading. In early play sessions and observations of behavior and Rorschach performance, there were no indications of psychopathology or deviant personality functioning. Thus, good home environments, superior intelligence, uncomplicated hearing losses, and well-integrated personalities were common to the three top achievers in this group.

Chapter 3

THE THREE POOREST ACHIEVERS The Problems of the Multiply Handicapped

The records of the three poorest achievers among the 20 children show that they were all boys, that two were definitely diagnosed as having atypical kinds of deafness while the question of the third's audiological problems went unresolved, and that all three struggled with emotional problems which produced difficulties in the process of their development. They varied in intellectual abilities, as estimated by performance tests, from superior to slow-normal, but all were equally handicapped in language learning and retarded from 6 to 7 years on standardized tests of achievement when they were 15 to 16 years of age.

Tim

Tim was a bright boy whose intellectual superiority showed up on performance tests of intelligence, in his art work, and in a superior Rorschach record. His was not a simple problem of reduced acuity of hearing but one of dysacusis and marked problems of central nervous dysfunction. While the audiological examiners at Johns Hopkins saw him as "a very neurologically mixed-up boy," the Rorschach record and previous psychological studies described him as an emotionally disturbed boy who could make good use of psychotherapy. Both evaluations undoubtedly had truth in them, with the neurological disturbances probably the basic, generative ones.

Tim entered school when he was 4 years, 8 months. He came from a lower middle class family in a small town. Hospital records report his birth as normal and describe him as a healthy baby of average weight and height. There was, however, a history of continued regurgitation of food shortly after meals during his first three months that conceivably may have been the first sign of the central nervous system difficulties. His developmental milestones were reported by his mother as normal, but he had a medical history of frequent viral infections with high fevers in his first year, and the ensuing years were marked by frequent falls and minor injuries. His parents believed that at one time he could hear such things as a music box and doorbell which he later seemed unable to hear.

As a preschool child, according to his mother, he was very easily frustrated in his play and easily upset. While there is no direct evidence, there are frequent secondhand reports by teachers who knew his family that Tim was quite unmanageable at home, that he ran away often and exhibited large-sized temper tantrums in public if frustrated in his wishes. Such tantrums are, of course, frequent with young deaf children but Tim's appear to have been of sufficient proportion and frequency to impress adults who were familiar with deaf children.

When Tim applied for admission to the school, the interviewing teacher described him as a very attractive-looking and shy boy who probably had some hearing. During his first months at school he was difficult to manage because he was so active. He was described by his teacher as "tearing around the playground, refusing to stay in bed, jumping over furniture, etc."

From the beginning in the classroom he had alternating periods of being overactive and then for days appearing "blank and not with us." His teacher reported that at first Tim appeared to have an idea of lipreading and was considered a potentially good learner, but his pattern of behavior was soon marked by these alternating periods of "blankness" vs. quick, sure responses to classroom stimuli. During his first year in school, his mother demonstrated how much he could hear by having him repeat monosyllabic words spoken in a normal voice to him with his back turned to the speaker.

However, his own speech was always merely imitative, parrot-like, never interpretative. He echoed back the last word of questions rather than answered them. His lipreading was of a "dry, analytic sort," with ability to point to words on a chart in response to reading them on the lips, but inability to understand more functional language. He did a lot of vocalizing but showed no approximate speech like that of most deaf children. As his first teacher summarized, "He just never seemed to retain anything: everything poured in, but nothing came out."

During his first year of school Tim had quite a few respiratory illnesses with ensuing periods of appearing "dazed" to parents and teachers. He had more accidental falls. The summer after his first year of school, Tim was referred to an eminent children's hospital for observation, where he stayed six days for detailed neurological and psychological examinations. The results of all tests were negative, aside from a rather tentative EEG reading of "probably normal," and Tim was discharged with the summary impression of "normal but deaf boy." He did very well on the hospital ward, with no evidence of seizures, appearing as "an alert, cooperative little boy who has shown evidence of some hearing." The gist of the chief neurologist's and psychologist's reports, respectively, were as follows:

Our impression... a very able, emotionally sensitive child... many infections in past year... and of whom rather more had been expected and rather more had been received than his emotional equipment would tolerate... important that he repeat the first year (of school) and also felt he would land on his feet if this concession to his emotional needs could be made.

A very attractive and pleasant boy. Has a good deal of lipreading. Very observant child who takes his visual clues wherever he can get them... Various tests (indicate)... at least high average intelligence. Quick in comprehension, good spontaneous ideas, knows how to shift flexibly from one situation to another, appears on the whole pleasant and well-adjusted... Family obviously devoted... child much attached... No unevenness of performance observed... Was good at school at first, then not. Might there not be emotional reasons... coupled with fatigue from infection?

These hospital reports confirmed the results of the early

psychological tests given Tim at school. When he was 5 years, 3 months, his M.A. on the Leiter Performance Scale was just 5-3 and his Goodenough IQ 108, but it was noted:

He was cooperative and willing enough to try but had a rather short span of attention and sometimes seemed to make errors because he lost sight of his goal.... His outstanding successes were those involving discrimination of visual differences and copying visual patterns, where he succeeded at the eight and nine year levels.

When Tim was 7 years, 9 months, this suggestion of above average ability was confirmed by his WISC Performance Scale IQ of 115:

Tim was thoughtful, quick of understanding and very alert throughout the testing period, behavior quite in contrast to the rather blank front he presents much of the time to any stimulation. He did well on all the subtests, understanding the nature of the tasks much more quickly than many of the children his age and approaching them intelligently and critically.... Tim's outstanding performance was on Block Design. He achieved a higher score on this subtest than any other child his age (weighted score of 19). He used no common trial and error methods, but perceived the whole quickly and constructed it quickly and surely -- a most amazing performance Another unusual aspect of his total performance was its evenness: there was no subtest on which he did poorly or showed weakness of any kind.

From the beginning of his school life, Tim appeared in his art work as more mature and with a richer flow of ideas than most of the children, showing great motor and sensuous enjoyment of painting, as well, using both hands to splash on the paint with two brushes. In his use of blocks, also, he seemed exceptionally mature in concept development. In all these activities there was none of the confusion, the lack of "gestalt," evident in the drawings and play of other young children who had proved to be truly "aphasic," a descriptive term which was being used by his teachers more and more often of Tim.

In his MLT and World Test play sessions, however, Tim's play and use of toys were atypical and seemed to suggest the presence of emotional problems. When he was just five, the writer's impression of him read:

Seems very immature, with wide-eyed unfocussed baby stare approach. Wanders. Would say he is a child who needs a lot of rich preschool experiences rather than formal work. Too unfocussed in every way to benefit from lessons.

At six and seven in two play sessions he built Worlds which were both "rigid" and "closed," in Buhler's terms, suggesting deep anxiety.

The pattern of Tim's school performance continued much the same as that of his first two years, and he spent most of his school life in a special class with three other slow-learning boys, Dan, Matthew, and Tony. At the end of his sixth year in school his teachers wrote of him such comments as the following:

Tim is a great problem but I don't know why.... He has a lot of hearing and is beginning to use it. Comes out with natural expressions like "oh goody".... But he hasn't tied up things. His home life is disturbing: he will do nothing for them at home, is all over the place. Very immature, has hard time to fit in here at school, acting like a five-year-old. He is never with us -- drifts away.

At times he does seem to be a very emotionally disturbed child and often is in a state of confusion or bewilderment.

Tim has a considerable amount of hearing. Some days he uses it and others he acts like an extremely deaf child.

His speech is confusing. He tries to talk as fast as the thoughts are going through his brain and just isolated words come out.... He has very little comprehension ability.

Tim is a strange little boy. It is difficult to understand the way his mind works. He doesn't seem to be interested in academic work and is therefore inattentive and day-dreams. He does seem to have a great deal of general knowledge but has difficulty in expressing it. He will study maps and the world globe for hours without getting bored. He can draw some maps from memory and also a road map of the small town he used to live in, including all the stores, etc.

For a long time, then, with the negative results of neurological examinations in hospital, and his demonstrated good performances on nonverbal tests of intelligence, Tim's learning difficulties were considered to be most closely related to emotional problems. It was always recognized, however, that his was not a simple case of hypoacusis. When he was about nine, a school hearing test by psychogalvanic methods revealed practically normal "hearing," with 20 dB responses at 500 Hz and 30 dB at 2000 Hz.

The question raised, then, was whether he was essentially "aphasic" or emotionally disturbed. At that time, because of the hospital reports and because of his behavior problems, action was taken on the assumption that the latter hypothesis might be the true one and he was referred to a community mental health clinic. His parents welcomed this opportunity, saying that they had felt the need for help with his difficult behavior for a long time. It was hoped that if the clinic would take Tim on for study, at least his parents might be helped to understand him better and to gain some knowledge of how to handle him at home.

When he was nine, then, Tim was accepted by the area mental health clinic for diagnostic study and possible psychotherapy. His parents were seen several times and Tim, himself, was seen for two diagnostic sessions. An initial staff conference which followed concluded that Tim's difficulty might be of an aphasic nature and the possibility was considered that he might have been so traumatized at the preverbal level that his hearing difficulty had resulted. It was felt, however, that a more thorough neurological examination was necessary, although psychological tests, like the writer's, had failed to give evidence of neurological dysfunction. An EEG examination was made with the following report given:

Record shows mild changes suggesting some dysrhythmia and if clinical conditions warrant it the child should be sent in for a complete neurological evaluation.

The clinic urged the parents to follow through on this, but it was never done, supposedly because Tim's parents felt he had been so upset by the previous neurological examinations (apparently the hospital sojourn when he was five). In fact, nothing more was ever done for Tim at this clinic, with a confused record of clinic appointments made and not kept by the parents for reasons which were never clear. The final summary by the clinic staff expressed belief in the rejection of this boy by both parents, despite surface concern, and inability on their part to carry through (perhaps to understand and believe in?) recommendations of the clinic staff. The director of the clinic wrote the following summary statement about Tim:

We have finished the diagnostic work and all are much impressed with Tim: his abstract thinking, judgment, ability to relate, etc. All neurological tests negative, but we wish to have the parents take him to Dr. _____, neurologist, for detailed examination to eliminate any possibility of organic disorder. If he finds nothing, we will then operate on the theory of deep emotional trauma and take him on for long-term therapy with the knowledge it will be long and difficult. As a last resort, if we get nowhere, we will recommend treatment at one of the new centers where people are interested in difficult cases.

His drawings seem to show concern with the upper part of the body, as is often found in children with brain damage, but no other tests supported this.

His play was "wonderful" and we were amazed how by the second visit he was able to do so much, "as if he felt the need to relate to a helpful adult."

The clinic tried in every way to get Tim back as a patient at this time, but this was never accomplished, thus leaving unresolved the diagnostic dilemma: neurological damage or deep emotional trauma?

The consensus of opinion at the school when Tim was 10 was that he was "sensory aphasic and with severe emotional problems." He was still in school but, it appeared, unable to learn anything. He had had a bad summer, with much running away and unmanageability at home. At this time still another group met to discuss Tim's history and problems, consisting of the writer, two other clinical psychologists, one experienced with aphasic and disturbed children, and a visiting child analyst from England. The summarized consensus of opinion was as follows:

Even if psychotherapy were to be indicated, the child appeared to have reached such a severely disturbed level of adjustment that the length of time for treatment would be almost prohibitive... the child's perceptual difficulties probably did not have an organic basis, but were consequences of heavy reliance upon repression and encapsulation as adjustment mechanisms, with tantrums resulting when these mechanisms broke down.

It was agreed that the mother was not able to manage the child and therefore upset him more by imposing limits which she didn't enforce. This presented him with an environment with ever-changing limits, and no predictable framework to behave in. Therefore, it was felt that a more consistent and protective environment, such as a boarding school, would be beneficial rather than remaining at home. This should be made

available whenever the school (for the deaf) no longer seemed appropriate.

So, Tim, untreated and essentially undiagnosed, remained in the school for the deaf. In his early adolescence he developed many somatic symptoms of disorder such as hot flushes, saying he could not breathe unless he got to a window, and dizziness. When Tim's birth history was obtained from the hospital in the follow-up study, his patient record accompanied it. Among the notes are those for 1961, when Tim was 14, detailing symptoms of tinnitus, nausea, vomiting, dizziness, and an occasional staggering gait. The treating physician felt that the disturbance involved probably both the cochlear and vestibular portions of the auditory nerve. Tim was reported then as having followed a routine of medication for two years with considerable alleviation of these symptoms.

Tim's Rorschach examination when he was 15 offered further evidence of his superior intellectual potential, as well as emphasizing again the emotional components of his problems. It was described as one of the better records of the group, indicating that he was a bright boy but one quite insecure with "feelings of being lost in dealing with the world." The Rorschach did not present any clear evidence of organicity but rather suggested that he was a boy who needed and might make good use of psychotherapy. The analyses of his figure drawings at the ages of 13 and 15 gave additional confirmation of his superior endowment, speaking of him as "very, very bright." The analyst also saw him as a boy with many fears and unhappy fantasies, one with strong, unmet needs for love which had kept him at a dependency level.

This brings us to the definitive results, finally, of Tim's visit to Johns Hopkins for audiological examination at the age of 15. The results of the first examinations are summarized by Hardy:

This boy is now undergoing a thorough medical diagnostic review. He has various severe organic problems. The entire GSR picture was highly unstable, and for good reason... found clear evidence of chronic, recurrent labyrinthitis (Meniere's syndrome); he has acute and chronic sinusitis, and much needs an adenoidectomy. He has many problems in audition, in auditing (or auding), in reading, and in speech reading. There is a fundamental verbal language disorder. With his

aid, on occasion, he can identify words at a 50 dB level; on occasion, he is aware of sound (without meaning) at nearly normal levels. The general effect of the labyrinthitis is a severe, badly distorting dysacusis, for which a hearing aid offers little benefit. (See Figure 4.)

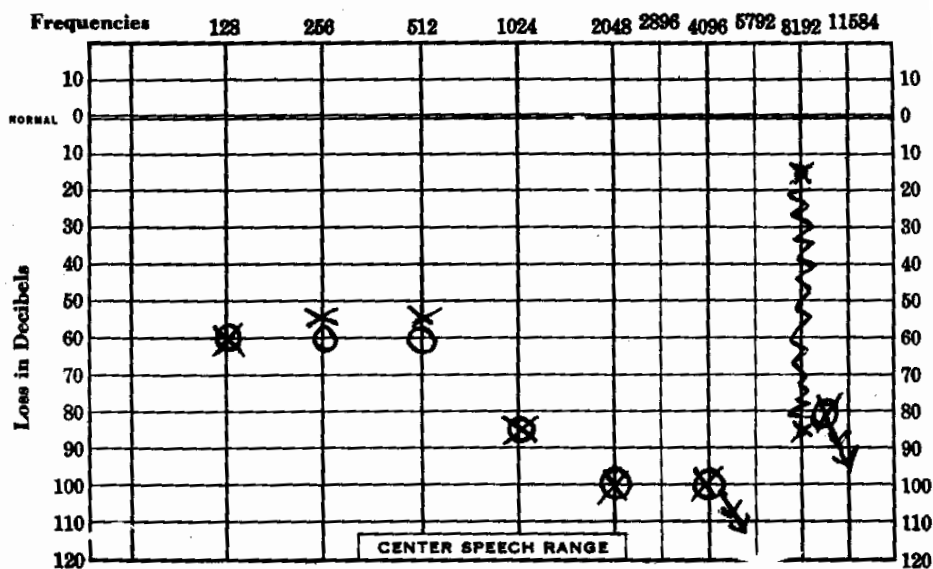


Figure 4. Tim's audiogram.

So interesting was Tim to the Hopkins staff that his parents were requested to take him back for a more thorough examination, which they did several months later. In addition to the above medical and audiological findings, a full psychological report was given. The Johns Hopkins final report is given here in full as an example of the sort of thorough diagnostic examination Tim merited at a much younger age and of which many deaf children stand in need.

THE JOHNS HOPKINS HOSPITAL
Diagnostic and Evaluation Center for Handicapped Children

TIM
Age: 15 yrs. 6 mos.
July 13, 1962

PSYCHOLOGY REPORT I

Psychological Examination:

1. Is Central Nervous System (brain) dysfunction present?

Yes.

2. Estimate of general ability level: (This estimate seeks to avoid penalizing subject for specific or isolated disabilities attributable to CNS dysfunction which may be present).

Tim's WISC Performance IQ of 127 (made up of tests where he is not penalized for his specific auditory disorder), places him in the Superior Intelligence category.

3. Are specific or isolated disabilities present? List and comment briefly on functional significance.

- (1) Tim has a severe auditory disorder, in which there is no evidence that he can discriminate any auditory frequency patterns, neither gross environmental sounds or single words. Although he is apparently responding to some auditory pressure patterns, he is unable to pass a three discrimination noisemaker test.

When the use of the visual modality is permitted, Tim is still quite limited in word identification. Thus, with use of auditory and visual inputs, he can pass one single word identification test at the 2 year level, but fails another; he can pass one simple command test at the 2 1/2 year level, but fails another at that level where it is more difficult to pick out key single words.

His expressive speech is mainly made up of single words, and his parents report that he "rarely uses sentences... even though he can rotely repeat sentences...."

- (2) There is evidence that Tim has some dysfunctions in the visual area also. Four of the five subtests making up the Performance Scale of the WISC were performed at a 140 IQ score. One subtest fell only at a 73 IQ equivalent, Borderline Defective level. (This one low score is what brought the full scale IQ "down" to 127). This particular test, (Coding), is a complicated one, involving the integration of a number of mental abilities in one single task

of learning, -- visual memory, writing, keeping sequence and order, use of symbols. In another test consisting of briefly exposed visual patterns which are to be reproduced, Timmy also performed no better than a child of borderline defective intelligence. Thus, while many aspects of visual information processing are well at a superior level, undoubtedly some fall way down at a borderline defective level. In a child whose auditory system is so impaired that he is able only to make use of pressure patterns at best, and who must then learn the entire structure of the language through reading, this difficulty in the visual area may well have been the "straw that broke the camel's back." Similar visual dysfunctions in a child with superior abilities and a normal auditory system may have proven to be of little or no functional significance.

4. Is there a management problem at home, school, neighborhood or community?
His parents do not consider Tim to be a particular management problem in the home. The school has apparently had more difficulty with him behavior-wise, and they have questioned whether his slow achievement may be due to "spoiling" at home.
5. Academic school problem:
Tim is reported as doing poor academic work. On a paragraph reading comprehension test given here, Tim's performance placed him at a 2.5 reading grade. Since most of his subjects are dependent on reading ability, Tim is indeed academically disabled.
6. Adequacy of social behavior:
Tim was friendly and cooperative when tested here. He was obviously strained during the auditory and language testing. But once the performance tests were begun, he was a very different participant. He entered these tasks eagerly, worked them quickly and well with natural pride in his accomplishments. After the rather painful experience of watching him attempt to perform the auditory tasks, one could not help but feel a similar pride in his demonstrated superior abilities.
7. Adequacy of emotional behavior:
Adequate for C.A. and specific dysfunctions.
8. Adequacy of gross motor development:
Adequate for C.A.
9. Adequacy of fine motor development:
Adequate for C.A.
10. Evidence of suboptimal functioning:
None.
11. Dominance:
Right.

12. Other neuropsychiatric conditions suspected:

None.

13. Prognosis regarding specific disabilities:

Tim's auditory disorder will probably remain the same. There is no evidence of the efficacy of special teaching techniques with such a child; nevertheless, I would attempt some specific reading therapy, although I am not optimistic about what it may accomplish.

14. Prognosis regarding previously estimated general ability level:

Remain constant throughout life.

15. Anticipated spurts in development in next year or two:

None.

Referrals and Recommendations:

It is questionable how much Tim will be able to achieve academically. It is most certain that he possesses abilities which can be applied to a learned skill or trade that will enable him to eventually function as a bright, though handicapped, adult. Therefore, I would plan a limited goal academic program for him, and essentially provide him with shop, etc., courses with vocational goal in mind. In the right area, Tim has the capabilities to be a fast achiever.

Family or Guardian Counseling:

Were major findings expected?

Not exactly as presented.

Are major findings understood and accepted?

They appeared to be.

Summary:

Tim is a 15½ year old child, with a severely incapacitating auditory disorder in which he is apparently making no association to any auditory frequency patterns. (See above, Item 3, for details.) In addition, he evidences some dysfunctions in visual information processing, which have apparently further limited his ability to learn the structure of the language through reading. However, Tim does possess superior abilities in many areas of visual problem solving.

It is, therefore, recommended that Tim's education be directed largely toward vocational goals which will maximize his many excellent abilities, and specifically prepare him to lead an adult life useful to himself and society. He certainly possesses the capabilities to achieve this.

Despite the recommendations for a more appropriate sort of educational experience, Tim remained in the school for the deaf. Realistically, where was there another type of school which might have accepted him? The local trade high school could not. A report of his progress by his supervising teacher when he was 15 years, 8 months, was disheartening:

Tim has worked nowhere near his potential in these years. On occasion he has participated orally in a class but most of the time he has been completely indifferent and careless. It has taken each teacher's full time and attention to get any work across to Tim and everyone has gotten weary of his indifferent attitude. He has a very poor medical history and his trip to Johns Hopkins in June has verified some of our own findings but given us little help toward making better progress with him.

At his parents' and doctor's request, he has lived at home, and we have not put any pressure on him during the past two years -- and Tim likes it that way! There are many days when he sits and looks out the window and does nothing. But the next day he may appear interested and want to participate. When he wants to, he can, we have found. His father has gotten over a great deal to him. But when he tried to make him do his homework, he didn't have any better luck than any of the rest of us.

Tim is a poor lipreader, a poor reader and his speech is almost unintelligible. But he can draw!

Thus, even with the basis of this boy's difficulties made clear, he was not any better off, with his teachers still tending to see his lack of academic success as at least partially a matter of lack of will power on his part. Tim, at the age of 18 plus, was still in the school for the deaf, with his future uncertain.

What might have been done for Tim to provide more adequate education and preparation for adult life? Perhaps little. We still have very few educational facilities for children with learning problems neurological in basis, although such children are being recognized and are familiar in any diagnostic center. Tim, at least, may have been fortunate in that his difficulties were not adequately diagnosed before he entered school, for if they had been the school for the deaf would not have accepted him. With more appropriate facilities not available, it is conceivable that he might have ended up in either an institution for the mentally retarded

or a state hospital ward for emotionally disturbed children. There are many such children in any population of "deaf" children. Some, like Tim, may not be peripherally deaf, others may have a true hypoacusis which is complicated by neurological dysfunctioning which makes them unable to profit from the methodology considered appropriate to the uncomplicated deaf. As with other types of multiply handicapped children, there is a great need for the provision (1) of early differential diagnosis and (2) of educational facilities, as well as of psychoeducational research to find those methods of remedial teaching which can help children like Tim function up to the level of their trapped potential abilities.

Matthew

The second very poor achiever, Matthew, was retarded 6 years, 5 months, on Stanford Achievement Tests at the age of 16 years, 5 months, about a fifth grade level of achievement, but tested at only the third grade level on paragraph and word meaning subtests. Matthew was also diagnosed as dysacusic by the Johns Hopkins examiners.

All these GSR levels (at 10 and 20 dB) were acknowledged subjectively for both ears. He acknowledged signals at 20 dB as "little" and those at 80 dB as "big." He receives no pitch information, however; all signals above 500 Hz were identified as "low" (whatever this may mean to him). Actually, both intensity and frequency appear to be badly distorted for him. His aid was out of order, but one must doubt that he gets much benefit from it under any circumstances. He has no capacity for even gross acoustic discrimination, let alone for speech. His voice is completely unmonitored. This is a profoundly deaf boy, who receives essentially no information from sound. The basic problem is an extreme dysacusis. Apparently, there are severe problems, as well, in verbal-symbolic memory. (See Figure 5.)

In addition, to complicate the picture, Matthew was a boy who suffered an extremely isolated and emotionally deprived early childhood. He was brought up hidden away in a home with an elderly aunt and uncle because of the death of his father and the necessity for

his mother to work away from home. Early developmental data concerning Matthew is rather scanty but what there is suggests a normal pregnancy and birth with developmental milestones normal, and no early problems noted other than the deafness. Matthew apparently had good physical care but was socially isolated with no sustained contacts with other than his elderly relatives. Matthew's deafness was suspected early and diagnosed by the age of one year. Henceforth he had weekly language training for about three years before he entered school, with the amount of auditory stimulation and language training at home unknown but probably very limited. When he entered the school he could neither lipread nor speak.

According to his mother, the entrance into a residential school at the age of 5 years, 4 months, was an extremely difficult adjustment for him, and she reported that the separation from home was still causing great pain to him even four years later. On the other hand, his teachers had always seen him as adjusting well to school: "an entirely different boy at school and at home." Certainly, in

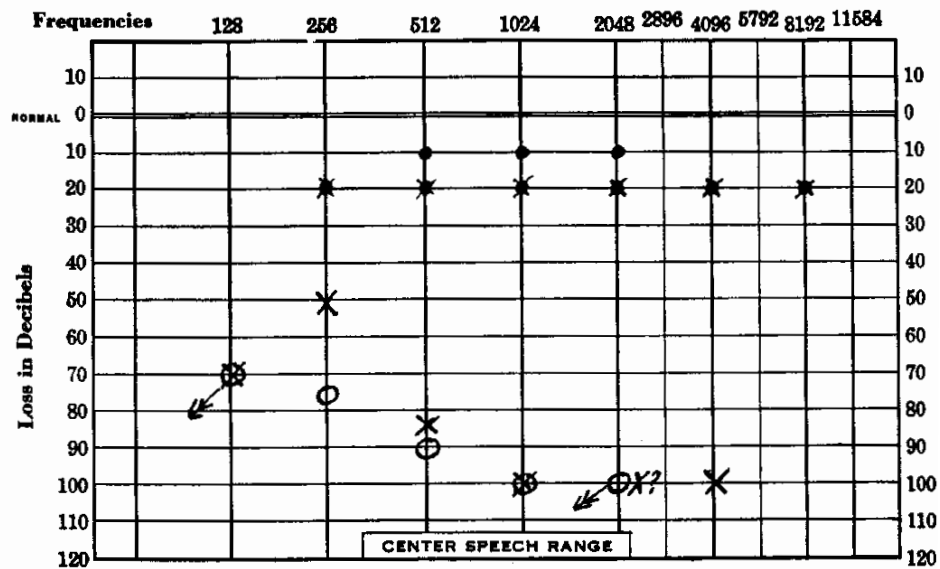


Figure 5. Matthew's audiogram.

this case, the increased stimulation and opportunity for expanded human relationships must be considered an improvement in living conditions, although the tie with the isolated home was undoubtedly a painful one to break. He was described by his mother on school entrance as "Hears no noises. Never babbled but now takes phone and jabbers as if talking. Gets mad and jabbers." Four years later she reported that sometimes he seems to hear quite well, noticing a door slam, saying a noise hurt his ears, and that he could hear television. At the age of eight Matthew was diagnosed also as being extremely hyperopic and was given glasses.

From the beginning of his school career Matthew was described as a slow learner with halting, laborious speech, "a plodder." He was soon put into the special class with Dan, Tim, and Tony, and at times in his early years it was doubted that he could continue in the school at all. He did, however, and at the end of his sixth year in the lower grades his teacher wrote of him:

Matthew is a well-adjusted, easy-going boy... liked by the other children. He always seems to be happy and works at a slow, steady pace. Speech rather poor... voice often forced and he cannot control the tone which makes it difficult to understand... a severe (hearing) loss and responds little to auditory training. Lipreading rather poor due to his poor eye sight.... Matthew does understand language but only after a long period of drill. Orally he still does not use complete sentences often and if he does they are usually very simple. His written work is precise and carefully written.... Matthew is a very good boy and his work is always his best.... He is slow but steady and reliable.

It was this "steadiness" and willingness to work, undoubtedly, that kept him in the school. His surface placidity, his lack of expressiveness, and lack of bothersome, aggressive behavior were interpreted as "happiness," and perhaps it was, for him.

Four years later, when Matthew was 16, the report of his supervising teacher was much the same, but the pathos of the picture of this boy's life was sharpened:

Matthew is a very retarded boy. He works as well as he can and is usually neat with his work. He is terribly shy. He avoids talking, if possible. He chooses isolation in the playroom and on the playground if possible. The first two

years in (dormitory) he was never happier than he was when he was sweeping the playground! His mother brought him a broom instead of a baseball mitt. He is a neat soul and it distressed him to have the autumn leaves on the ground or to see the accumulation of dirt in the spring. In winter he shoveled! He just moved snow from place to place.

He is better at written work than in oral work. He has always seemed to try to memorize language rather than to understand it. He seldom uses any of the new words or language forms which are taught in class. His attention span is short and his attention is poor much of the time.

I have already suggested to his mother that soon we will have to think of an on-the-job training opportunity for him, for his school progress is too limited to consider graduation. He has worked in a greenhouse in the summer, but he was utterly helpless when I tried to have him repot some plants for me last year. I suspect he might be quite good at a janitorial job. He never has given us a minute's trouble and is a willing worker.

Matthew, however, remained in school another two years, until he was 18, and then left and had a job working in a small manufacturing plant near his home.

Matthew obviously benefited little from 13 years of education for the deaf and, like Tim, he needed other methods of stimulation and training -- methods which still need to be discovered, or borrowed from other fields of remedial education, and tried out with deaf children having such acute learning problems. His teachers' reports make Matthew sound like a mentally retarded boy. Certainly, he never tested as high on nonverbal tests of mental development as many of his peers, but he was always within the normal range. When he was five his Leiter Performance Scale IQ was 99, and he worked quickly and accurately on the tests. The writer's first impression of him was of a "little boy of good intelligence but not too interested in the whole performance." At 8 years, 5 months, he obtained a WISC Performance Scale IQ of 93. He was slow, obtaining few credits for speed, which was a handicap in this examination.

He was thoughtful and careful in everything he did, but depended too much on the approval of the examiner for each step he took. He seemed definitely lacking in self-confidence and inordinately pleased when told something was "good" or "right." Qualitatively, his poorest performance was with Block Design and Object Assembly, tests on which these deaf children usually do best.... His difficulties with these

tests may reflect some of the same weaknesses which show up in his poor lipreading.

On his final WISC examination, when he was 14, his Performance IQ was 90 but Verbal IQ only 56. At this time he had much trouble with the Picture Arrangement subtest, where he could not understand the simplest everyday situations pictured, and with Coding. The latter subtest difficulty would be expected with a boy with his learning problems, involving as it does integrative activity and manipulation of symbols. He could do little with the verbal scale subtests:

Matthew could not understand the printed questions and directions nor get much orally... he responded only with single words. Interestingly enough, as an indication of normal intellectual capacity, he did best with Similarities, achieving a near-average score. He could identify only six words in Vocabulary, obtained a weighted score of 0.

Projective play sessions in his early school years had consistently revealed Matthew as a slow-moving boy with a "lost" air about him. Comments on his very simple play and impressive behavior at 5 years, 8 months, read:

Seems very quiet and repressed for such a big, husky boy. Bewildered? Needs encouragement to play freely? Had a quality of being rather at loose ends, of wandering about in unfocused fashion. He kept looking to me -- for guidance? confirmation? approval?

His Worlds built at six and seven tended to be overly neat and rigidly schematic, "anxious Worlds." He wanted to know the "right" thing to do with each toy, asking for reassurance. All people were put apart, on a chair, suggesting to the Buhler-trained examiner of the records "a feeling of isolation" rather than rejection of people. A summary of his play sessions was written when he was seven:

Very slow in tempo, with thoughtful air... has inexpressive, heavy body, with characteristic facial expression which seems empty and lost, a "wondering" expression. He rejected or disregarded all aggressive toys and expressed fear of aggressive animals such as an alligator, but his fear seemed mild. Everything about Matthew is mild! Is he always so

heavy? Seems immature for seven but seems bewildered rather than dull. Has pathetic impression of wistful seeking. Very eager for adult approval and attention.

It is easy to see in such descriptions of Matthew the picture of an emotionally starved child. Certainly his preschool years were not ones to stimulate mental or emotional growth or to give him much food for healthy personality development. If we add to this serious early handicap of emotional deprivation and minimal stimulation his atypical deafness, it is easy to understand why Matthew was such a school failure. One wonders what a rich, invigorating nursery school program might have done for Matthew as a prelude to the formal classroom teaching, and what later teaching adapted to his unique language-learning problems might have done to help him. One wonders also, with Matthew, to what degree his "dysacusis" may have been psychogenic.

Matthew's early art work suggested the same sort of rigid and anxious approach to life. His products were always aesthetically interesting, with a Mondrian-like use of space and color, but empty of any content. The artist-psychologist who studied them described them perceptively as "not emotionally empty but rather seeking peace and organization in an almost sensual way." His human figure drawings at 15 and 16 were seen as reflecting great oral needs, i.e., needs for affection, and he revealed himself as "very estranged." "Masochistic, with lots of aggression and rage against self and environment." His Rorschach record at 15, like those of Tony and Douglas, suggested chronic impoverishment of the ego and underlying depression. He seemed to have extreme difficulty in feeling about men and about himself as a man, with a poor contact with reality, special deprivation feelings, and feelings of impotence. The Rorschach analyst wondered about his ability to become independent and to function outside of an institution or sheltered community.

In conclusion, somewhat the same comments can be made about Matthew as about Tim: here was a multiply handicapped child for whom the school for the deaf did its best but its best was not good enough. Matthew, also, needed to be taught as a child with atypical language-learning problems. Before any sort of formal teaching

could have helped him, however, it appears that Matthew needed first a very special sort of psychotherapeutic help which would have attempted to compensate for the emotional deprivations and impoverished environment of his earliest years. Like many young children, hearing or deaf, Matthew needed his own uniquely slanted "Operation Headstart."

Dan

Dan was the youngest of the 20 children entering the school. He was a tiny boy of only 4 years, 4 months. He also was the only one who did not continue his education in this school. He left when he was 10 because of difficulties of adjustment to residential school living, in addition to severe learning problems. Like Tim and Matthew, he spent most of his school years in a small special class of slow learners. Because of his disruptive behavior problems he received more attention from the writer than did any of the others during his 6-year stay. During his last 2 years in the school, he participated in frequent play sessions which were arranged to find out more about his problems and, hopefully, to help him with them. Details of some of these play sessions will be given here to show how revealing such records may be even with a nonverbal, deaf child.

There is no hospital report of Dan's birth but it was described by his mother as normal in every way, with a birthweight of 6 lbs., 4 oz. However, he had a difficult introduction to life because of prolonged feeding difficulties and frequent bouts of respiratory illness. Reports of toilet training "completed by nine months" suggest that there were more than the usual pressures and stresses involved. Dan was hospitalized at the sensitive age of 15 months for 2 weeks with only occasional visits by his parents. Perhaps because of this hospitalization, Dan did not walk until he was 18 months old.

There appears to have been considerable familial anxiety and

overprotection in his preschool years and later childhood, and he was still being called "the baby" when he was eight years old. When at home, both before and during his school years, he had limited experiences with other children and no freedom to move outside his own small yard because of his family's intense fears about his physical safety.

Dan is supposed to have been born deaf but his parents questioned this, maintaining that he had been a normal child until after his hospitalization at 15 months. He had been hospitalized with a high fever; spine taps and other tests were made but no diagnosis other than "bronchitis" was made. Before this the family circle and friends considered him "just like other babies": he smiled when spoken to, babbled in a clear voice, etc. When he returned home he was, from family reports, "not the same any more," and they then noticed for the first time that he did not respond to their calls nor react to environmental sounds.

His hearing deficiency, then, was diagnosed before he was two and he had early Tracy Clinic training at home and also attended a weekly class for preschool deaf children. When he entered school, however, he communicated mostly by gesture, although he was described as "jabbering all the time" and as trying to say many words. He was quite unable to lipread at that time. Attempts to estimate his hearing loss through conventional audiometry were unsuccessful at that time and continued to be so throughout his school years. Later GSR audiometry at the school was quite unreliable also. At first it was considered that he heard at about a 50-60 dB level but later on he was considered profoundly deaf. There is some anecdotal evidence that his might not have been peripheral deafness, such as the reports of his supervising teacher that he heard the front doorbell ring when he was with her at the far end of the dormitory. Unfortunately, Dan was the one student who did not go to Johns Hopkins for audiological evaluation. It seems quite possible that he might also have proved to be a boy with an atypical sort of deafness, like Tim and Matthew, but there is no definitive evidence of this. The lack of success in trying to condition him with GSR audiometry, the unreliability of conventional audiometric tests,

his history of late walking and of poor gross motor coordination on school entrance, as well as his extremely impulsive, explosive, and destructive behavior as a young child make the possibility of an organic basis for his deafness and his disturbed behavior a very real one.

Dan's entrance into residential school living was a difficult one, both for him and for his parents who were extremely upset over leaving him. Dan himself was wild and excitable and was soon considered an emotionally disturbed child. He had peculiar food problems and did not seem to care about food then or in later school days. He was described by his teacher as a tiny, pathetic boy with considerable lack of coordination in walking. He was always independent in his play, relating to other children only to disturb their play in destructive ways. He attacked other children in many ways, most dramatically by waking the other little boys in his dormitory at dawn, by twisting their noses, sometimes hard enough to make them bleed. Often he would attack a child from behind, trying to throttle him, or attack adults by grabbing at their ankles.

Despite such behavior problems, his teacher in his first year of school considered Dan an average learner, but he soon showed that he was unable to keep up with his group. He developed no speech and, while he had a start in lipreading, it was not spontaneous and he did not watch purposively. He was, then, soon identified as a slow learner and put in a special class with Tim, Matthew, and Tony, and at times the supervising teacher wondered how long it would be possible to keep him in the school, as with Tim and Matthew. Dan's teacher had him for three years in this special class. She was interested in him, patient with him, and felt he had much more ability than he "let himself use." She wrote of him in summary:

I think that Dan calls forth every bit of patience which one can muster. There are times when he is a pleasure to have around but there are many times when he would try a saint I hope to live to see Dan graduate and mature. It simply will take the combined efforts of everyone to deal with him in the right way. Here, we have a real challenge.

The challenge was too much for most adults who tried to help Dan, however, and the report of his last year in school is probably more characteristic of the reactions to him.

Dan is perhaps best described by his extreme anti-social nature.

He is a very disturbed little boy who wants to be the center of attention... and will go to any extreme to get this. He is unwilling to cooperate in any situation without showing some sort of very intense emotional behavior. If he cannot win the attention of his classmates by clowning then he resorts to physical acts such as kicking, hitting, pinching, and stamping on their feet. He is extremely sly in doing this and is very often not caught by the teacher and will cleverly lie about all of his misdeeds.

His clowning captures the attention of the children at times but he is very unpopular because of his malicious treatment of them. He appears to have no sense of pain at all so whatever retaliation the children make he treats just as attention and enjoys it. After a short period of work by himself he often gets up from his desk, goes to another child's desk and pushes everything on the floor or attacks the child. He often becomes frustrated with himself and when left alone will pound the desk with his fists and scream for no apparent reason.

He seldom takes any pride whatever in his work or belongings... A very few times he has written neatly to show that he is able to do so. His speech is very sloppy although he is capable of giving good speech if he so desires, which is very seldom. His lipreading is fair and depends on his interest in the subject. His language appears to depend on the extent of his frustration at a particular time. Very often in written language he just writes words without much of any thought and at other times he writes quite logically.

He responds as a very deaf child and does very poorly in any sort of auditory training, perhaps because of lack of attention... His reaction to any sort of correction is refusing to look, loud screaming and stamping or simply laughing and walking away.

By this time it is understandable that Dan had little interest in watching faces or in trying to understand what was said to him, for he had lived for six years in an atmosphere of much disapproval and punishment. One can hardly blame the adults who struggled to understand and to help Dan for he was a very exasperating boy indeed. Dan needed, and failed to get, a complete diagnostic evaluation when his troubles began on school entrance, and without such diagnosis his problems could not be understood nor the appropriate

therapy provided. Facilities for the study of such young deaf children were at that time, and even today, hard to find, and opportunities for psychotherapy for such deaf children are still practically nonexistent.

The diagnostic studies of Dan within the school framework served to clarify his problems somewhat. Certainly it was clear that Dan was not handicapped by any degree of mental retardation. He had his first test of mental development when he was 4 years, 11 months, with the Leiter Performance Scale, resulting in an IQ score of 112. It is worth noting the summary of his test behavior:

To my amazement Dan gave the outstanding performance on the Leiter tests of all the boys in his group. He was interested, eager, and very quick to catch on to the nature of the tasks before him. He refused help and disliked demonstrations, wanted to dive into each test and do it himself and he usually knew just what was to be done. He showed an excellent span of attention and unusually good capacity for self-criticism: he really studied the materials before him carefully, matched and re-matched critically, saw many of his own errors and corrected them. Above all he was delighted with his successes and positively glowed when rightfully praised for his performance. He is a little boy who obviously needs and reacts very well to approval and praise. He impressed me as a boy of at least good normal intelligence: nothing he did was slow or dull, even his failures were good ones, e.g., intelligent attempts to perform on seven and eight-year items. He failed no test item below the five-year level.

One wonders how this drive to perform, this delight in achievement, this keenness, might have been capitalized on for better academic achievement by imaginative and unorthodox teaching. Dan consistently showed these qualities in the testing situation, leading to the apt but despairing remark of one teacher that "Dan is good at nothing but intelligence tests!" Along with the unqualified acceptance and approval of the examiner, perhaps the one-to-one relationship was the crucial aspect of the situation, for Dan seldom showed such behavior in the classroom situation where he had to share the adult with fellow students. In later mental tests Dan achieved similar scores: a WISC Performance IQ of 113 when he was 7 years, 6 months, of 101 when he was 15.

In contrast to these test scores, Dan's figure drawings were

always primitive -- rigid cross-shaped figures without hands or feet -- and his Goodenough IQ scores were in the 80's or less. In the writer's experience (1957), such low scores on the Goodenough Scale are characteristic of slow-learning deaf children. Dan's early paintings were equally revealing of emotional problems. For two years he confined his palette to black and brown, and if he added another color it always ended up as a dirty brown, through mixture. Using less than a third of a full newsprint size paper he scrubbed and scrubbed with his dark colors in one corner of the paper. Along with the depressed-looking product went a lack of any sign of enjoyment as he painted, always with the same deadpan facial expression. When, in his third year of school, he started using several bright colors, he finished by covering the more cheerful product with a coat of black paint. The summary statement of analysis of the products of his first five years of art work said of him:

A bright, imaginative, independent to willful boy. Sense of humor. Very much all boy. Shows self as somewhat precocious in awareness of sex. Probably capable of doing much better (in school) than he does: may be hampered by hostility. (There are) hundreds of symbols of aggression in forms and color.

We can follow up this statement with the "blind" analysis of his figure drawings done when he was 15:

Energetic, powerful, impulsive and sensitive. (There is) sadness and hostility. A very energetic boy, very preoccupied with mother. Very anxious: finds her rigid, stiff, cold. (There is) lots of anxiety present.

Dan's early play sessions were equally revealing. First seen alone at the age of 4 years, 8 months, after preliminary visits with his classroom group to the observer's office, he would stay only five minutes, in marked contrast to his peers. He began to cry, refusing offers of candy and all friendly overtures of the observer. Notes from this brief session read:

Seems a frightened, bewildered, tiny boy. He has a furtive quality about him, like a little mouse. Has a deadpan,

scared expression... Appears like a small boy who needs much reassurance and warmth, much skillful help, and is getting much physical restraint and punishment for his aggressive behavior.

At this time his supervising teacher in his dormitory had reported that he could be controlled only by physical punishment. Certainly, the patient, loving sort of help Dan needed was practically impossible to provide in the group living situation of a school dormitory.

When he was 6 years, 8 months, Dan had his first full session of play with Miniature Life Toys. He showed compulsive and schematic organization by lines, an ignoring of all people except the policeman and the baby, and tremendous absorption in details and fussy concern with neat alignment of toys. He returned again and again to aggressive play with snake and alligator and to absorbed study of the anatomy of one female doll. There was obvious, as earlier, a hidden, furtive quality to his play, with much frowning and anxious facial expressions, as if he were trying to figure out weighty problems. When this material, and that from ensuing sessions, was presented to an English child analyst¹ she saw much evidence of concern for himself as different, as revealed in concern with and rejection of broken toys, along with preoccupation and anxiety concerning sexual activities.

Another MLT session when he was 6 years, 10 months, was much the same, and a clear pattern of play became evident which persisted for two years: the alternation of quiet, absorbed periods of fussy alignment and matching of toys with abrupt bursts of aggressive, noisy play such as grabbing a pegboard and pounding the guts out of it or whirling around and around the room with a small train, working up to a climax and then subsiding into quiet play again. To the analyst this frenzied play reinforced her picture of Dan as a compulsive masturbator (never confirmed by observation or reports from teachers), one basis of his deep anxiety. Such play resembles that called "erectile behavior" by Mahler (1955), in agreement with

¹Margaret Evans

this analyst's hypothesis. Dan's play with snake and alligator and his repetitive play of putting small things into all available openings, to the analyst revealed clearly his preoccupation with sexual activity and his deep anxiety concerning the sexual act as aggressive and cruel. She asked if he had shared the parental bedroom, and it was later confirmed that he had done so until about the age of three and one half.

World Test play sessions elicited the same sort of play patterns, with Worlds built which were rigid and aggressive and markedly lacking in human relationships. Since Dan was so badly in need of help with his emotional problems, permission was obtained for Dan's release from classroom work for one hour a week for play therapy. More frequent sessions would have been desirable but this was impossible within the limitations of time and his teacher's reluctance to release him from class work. The writer was not an experienced therapist but, reassured and guided by the child analyst and by former colleagues of the Vassar Child Study Department, she started on a series of play sessions with Dan in the fall when he was seven. In that school year, however, for various reasons of school programming, he had in all only 16 sessions. These sessions, of which detailed running records were kept, were uniformly marked by the alternation of precise, compulsive sort of play and periods of loud, aggressive play, with the aggression coming to be directed more or less playfully towards the observer. Dan showed an excessive concern with orderliness and neatness, piling empty boxes, putting toys away in proper places, a marked concern for broken toys, a rejection of all people except aggressive ones -- cops and soldiers -- repetitive locking and unlocking of doors, and an interest in manipulation -- how do things work?

The protocols of these 16 sessions, along with other information about Dan, were presented in a seminar at the 1955 Vassar Summer Institute led by the same child analyst, who also spent several hours discussing them with the writer and making recommendations for future therapy. She remarked repeatedly "This is such familiar behavior," and felt strongly that much could be done to help such disturbed deaf children despite the limitations of verbal communication. She saw Dan as a child who had a poor beginning in life because of

feeding difficulties, experiences bound to arouse aggressive feelings, and with a preoccupation with things sexual by the age of four. The discussion emphasized that a child is helped if he sees his parents as happy together, and if he has been aided in building up fantasies of their relationship as good and not as aggressive and cruel. It is interesting to note here that at this time, when he was seven, Dan drew a picture of his father with a sad face and large tears cascading down his cheeks, and a year later he drew the male figure in a Draw-a-Person Test with drooping lips and tears on his cheeks.

Varying interpretations of the play behavior were suggested, from the Kleinian interpretations of the child analyst to explanations in terms of Dan's learning to cope with his world through the repetitive lining up and matching of toys. Whatever the interpretations one preferred, the consensus of opinion of the seminar members was that since Dan had come to depend on the play therapist for understanding and acceptance, she must continue these sessions with him, and must try to seize occasions for some sort of communication concerning the anxieties he was struggling with. An attempt was to be made to get across the idea to Dan that the aggression, etc., in play, were projections of his inner feelings and conflicts.

Play sessions were continued, then, in the following school year, but only 13 were held altogether. Dan was delighted to continue, seizing the writer's hand and kissing it when she went to get him for the first session. However, he seemed in a very disturbed state that fall, discontented, irritable, in a bad humor most of the time. He would accept no suggestions for play, refused to look at the writer if she tried to communicate, slammed around the room twirling chairs, breaking all chimneys and other protuberances off toy houses, pushing desk drawers in and out repetitively, etc. (The analyst's interpretations seemed pretty clearly confirmed in some of these sessions!)

The holding of the play sessions was made difficult when the supervising teacher reported that he was becoming increasingly difficult in classroom and dormitory. Everyone complained of the same sort of "mean, aggressive" behavior, with his showing no interest

in constructive play but rather in the destruction of buildings of other boys, of much punching and kicking of other children. In the classroom he was doing nothing and seemed to be losing ground. The supervising teacher wondered whether the play sessions were not good for Dan because they "made him feel too special." The writer agreed that they might be partially to blame for his behavior, since children in therapy often become increasingly difficult at home. The crux of the problem in a school situation was that supervisors and teachers alike felt they could not make the necessary allowances for him, that "all children must be treated alike." Dan was not being physically punished very often but was regularly disciplined by being deprived of desserts, outdoor play, etc., all to no avail. Such deprivations, of course, could only exacerbate his problems.

Yet there were hopeful indications also. For the first time, Dan was drawing human figures that were more than wooden crosses, that had hands and feet and showed movement. His play sessions were also becoming more free and communicative, as were his communications through drawing, as the following extract will illustrate:

Dan consented to play with the block dollhouse on the table and stayed with it for 50 minutes, pouring out material. The first drama: he undressed the mother doll, put her in the tub, got the snake and made it crawl through the house and wildly attack the mother. The father rushed in to the rescue. Much domestic drama throughout, with father obviously the villain and being beaten and knocked about by Dan. Several times Dan showed the observer the mother's breasts, then squeezed himself and grinned widely when the observer said, "Not you. A woman." The boy doll often woke his mother to take him to bathroom, get him a drink, to chase him. She usually kissed him also. The observer wrote to Dan: such questions as: "Mother loves father? Father loves mother? Mother and father love the boy?" and to the latter he answered, in writing: "No. BAD." He said that the father was bad because he "cries mother," and the mother cried because of "Boy," he wrote. The observer tried to reassure him that mother and father loved each other and loved the boy but he would not "listen," resisting all face-to-face attempts at communication.

All attempts at such interpretation were difficult, because Dan rejected them. It was never clear, for instance, whether or not Dan understood the message of the paper boy doll constructed

with a door in the torso, behind which was an exact replication in drawing of Dan's play construction in the room, an attempt to get across to him the notion of his aggressive play being a projection of his inner feelings and conflicts.

Dan left the school suddenly before the end of this school year and with no gradual tapering off of the play therapy, but an attempt was made to soften the to-be-expected pangs of separation by sending him cards and drawings for at least a few weeks. The following summary was written shortly before his departure:

Dan is still a tiny, thin boy with white face and circled eyes, who looks underfed and has hands which are usually cold and clammy. He is a poor learner, although he tests consistently as at least average intelligence. He seems clearly a deeply anxious boy. All projective tests show signs of deep emotional disturbance, as does his everyday behavior. The causes of disturbance would appear to lie far back in infancy and early childhood: early severe feeding difficulties, an intensely anxious and probably over-strict mother, a restricted home environment with marked lack of normal experiences producing intensely disturbed relations with people.

How can he then have enough energy to learn in school? His teacher says: "Dan has fought everything every inch of the way." The problem would appear to be: how can a school like this help such a boy, especially with the emphasis on verbal, academic learning, and with the lack of opportunity for free boyish play and the possible acting out of some of his aggressive feelings, and with lack of reassurance from human relationships? In such a school situation are play therapy sessions advisable? Can help for him and his family be obtained elsewhere?

Preliminary inquiries were made with the director of the area mental health clinic, but before anything could be arranged, Dan had departed from the school.

Our understanding of Dan's problems, then, can only be partial, especially since he did not have an audiological examination at Johns Hopkins. We do not know what sort of deafness he suffered, nor do we know what, if any, neurological dysfunctioning there was. Certainly his behavior was grossly disturbed and he was clearly so involved with his emotional problems that it was little wonder he could not learn much, or even desire to do so.

It is provocative to our thinking to know that after he left the residential school, lived at home, and attended a day class

for the deaf, his behavior seems to have improved. Did returning home help? Or were the two years of play therapy really therapeutic? The experienced therapist, with whom these sessions were discussed, believed that they must have been helpful as the only experiences of total acceptance that he enjoyed during those school years. For whatever reasons, his teacher at the residential school, who had tried hard to help Dan and who kept up contacts with him after he left, described him as "a different boy." He was happy at home, worked with his father, and caused no trouble at school. He was taken to a local child guidance clinic and reportedly dismissed as not needing treatment, although there was no confirmation of this by a direct report from the clinic. The summer after he left the school he went to a day camp and apparently got along well enough. Was, then, much of his disturbed behavior an exaggerated reaction to separation from his mother and to residential living at a very young age? Certainly, living at school did nothing for him and must have made his emotional problems more acute, whatever their origin, for he lived most of his years in school as the proverbial "Peck's Bad Boy." Later he went to another residential school where his behavior was quite acceptable, but where he continued to be a very retarded learner. There he enjoyed considerable success as a football player on the small boys' team -- success which must have been therapeutic, as football is fine legitimate outlet for aggressive drives.

When Dan was 15, he was seen at this school and had the follow-up testing with WISC and Rorschach. Whether he remembered the writer or not, he seemed glad to see her and was friendly in the testing situation. The WISC report reads in part:

While Dan has grown up a good deal and quieted down, he is still recognizable in his test behavior. He is very eager to do well, impatient of demonstration and rushes at problems impulsively, especially when aware that he is being timed in his performance. It was necessary to keep reassuring him that there was no great hurry, but even so his apparent desire to do things quickly probably handicapped him somewhat. On the performance part of the examination Dan did well, achieving a total score which agrees well with earlier WISC and Leiter examinations: (Performance IQ 104). Dan is very quick in his visual perception and understanding of nonverbal tasks, and generally accurate also, despite his drive for speed.

It was amazing to see him handle the puzzles, on which he obtained maximum credits for both speech and accuracy. He showed quick understanding of the everyday social situations of Picture Arrangement and again obtained maximum credits for the four he completed correctly. On the three most difficult sets he was probably handicapped by his urge to speed and did not take time to study and to check his arrangements.

When it came to the verbal tests it was another picture. Dan has great difficulty in reading and understanding what he reads. He did best with the mental arithmetic problems, which were solved quickly and accurately provided he recognized the processes to be used. He found it impossible to understand Similarities, i.e., to point out how two things are alike, and almost as difficult to define words. Dan's language limitations also showed up in the Peabody Vocabulary where he had only to point to the picture named (or read by him). His raw score yielded a derived M.A. of only 3-8. (Compared with the other slow-learning boys in the group of 20: their M.A. range was 5-8 years on this vocabulary test.)

The Rorschach testing was very difficult for him and he appeared much less responsive in this session than he had with the WISC earlier in the same day. His Rorschach record appeared to the analyst as a quite atypical record, with strong suggestions of either brain-damage or serious emotional disturbance. It was a very limited and impoverished record, extremely infantile in comparison with most of the records of the group. A great deal of perseveration in the record strongly suggested organicity. However, it seemed likely to the writer that the record also reflected Dan's severe language limitations. His expressive behavior during the examination was interesting: strong reactions of amazement to the ink blots, so marked that he actually jumped several times as the cards were presented. He also did a lot of frowning reminiscent of his early play sessions behavior, and refused several cards. At this time, in school work, he was performing at about the third grade level on the Stanford Achievement Tests.

What can we say of Dan, then, in conclusion? He has been described in more detail than most children in the group, because he is an outstanding example of a child whose problems could not be understood by his teachers and supervisors. His needs were also grossly neglected because of lack of personnel and facilities, both in the school and in the community. Whatever his atypical hearing problem may have been, he was clearly a child with serious emotional

problems that needed to be met with adequate psychotherapy, for both him and his parents, before he could be expected to desire, and be able, to learn under any system of education. Unfortunately, he also appears to have been a bright little boy whose potential was never released.

Discussion

As did an earlier study (Fiedler, 1957), the histories of these three poor learners emphasize the needs for expert differential diagnostic examinations of all deaf children, especially those who do not benefit from early instruction. This is, as we have seen with Tim, very often a difficult process and one which must involve the collaboration of a team of experts. No longer can we place a child in a school for the deaf purely on the basis of an audiogram and consider his problems solved. Many deaf children are multiply handicapped, struggling with problems other than their reduced acuity of hearing. Hardy, for instance, has found that 70% of children referred to his clinic because of failure to develop language and speech have central disorders of some sort (Ewing, 1960).

Van Den Horst in the Netherlands has estimated that 50% of the deaf are multiply handicapped and many others have emphasized the urgency of this problem (Barger, 1960; Doctor, 1959; Farber, 1964; Monaghan, 1964; Myklebust, 1954; Vernon, 1961; Weir, 1963). It is desirable that such differential diagnoses be made in the preschool years, but it is often not possible. A continuing process of study and reevaluation often must go on well into the child's school years, with the services of a team of experts continuing to supplement the insights of the educators. As Watson (1960) has said, the science of audiology can be defined as a new discipline where specialists from a number of fields meet to discuss a common problem -- hearing and the effect of deafness on the social, emotional and intellectual growth of the individual (p. 2).

Secondly, with the clinical facilities for adequate study of

deaf children increasing, and with the frequency of adequate differential diagnoses increasing, it is obvious that more varied educational opportunities are needed. Educators of the deaf are aware of the needs of the multiply handicapped within their schools, as could be noted in the reports of many speakers at the 1963 International Congress on the Education of the Deaf (1964). As yet, however, few schools for the deaf have facilities for offering differentiated programs of instruction, with the exception occasionally of classes for the mentally retarded deaf or for "aphasic" children, and often these classes are filled with children incompletely diagnosed and misunderstood. Great gaps remain in our knowledge of how such children can be helped to learn, but there is a good deal of possibly helpful information available in the psychoeducational literature concerning programs of education for hearing children with learning handicaps, which might be adaptable to the deaf. The problems of the multiply handicapped deaf child wait for more inspired research workers to tackle them, and primarily, for much greater financial investment in research into problems of methodology and curriculum for the deaf than the recent national survey (Advisory Committee on the Education of the Deaf, 1965) indicates is expended at present.

Chapter 4

BELOW-AVERAGE ACHIEVERS Problems of the Multiply Handicapped: Emotional Problems

In addition to the three extremely poor learners, three girls and three boys, 16 years old, were educationally retarded from 5 to 5½ years on achievement tests, as compared with the mean retardation of 4 years for the entire group. Thus, they were functioning at the fifth to sixth grade level according to median test scores, but at only the fourth grade level on subtests of paragraph and word meaning. It was a varied group, with one who had dysacusia, one who functioned as hard of hearing, and four whose poor learning was associated with emotional problems.

Wendy

Wendy, who was considered dysacusic by the Johns Hopkins examiners, was the only one of the six who appeared to be a fairly well-organized personality, and who kept along in school in a normally progressing class. Although at the age of 16 she appeared on achievement tests to be as retarded as the other 5, she was always considered an average learner throughout her school years. The other five were consistently rated as poor learners by their teachers. This may well be because she was healthy and normal with an active, responsive, outgoing personality, and because standard tests underrated her achievement. She had always struggled, however, with very difficult problems of speech production, and her

voice sounded very deaf, deafer than it should have been with her apparent hearing loss. She always tested as having bright-average intelligence on nonverbal tests, with her final WISC Performance IQ 102, Verbal IQ 72, but she gave the impression of being brighter than average -- again, perhaps because of her personality.

When Wendy entered the school at age five years, seven months, she had had individual teaching for over a year as well as one year in a day school for the deaf. For a small deaf child she had had a remarkably rich, normal sort of life, with many hearing playmates and freedom for play comparable to theirs. She had been a healthy baby, with a normal birth and no history of unusual early illnesses or traumas. Her developmental history was normal for her first two years. Before she was two she was talking in single words; but then she suffered an illness with high fever, probably meningitis. This illness was considered the probable cause of her deafness, although there was a history of defective hearing in her family. Her first teacher, trained by the Ewings in England, considered her very quick and bright but slow in picking up speech. At that time she was considered to have a severe sensory-neural hearing loss, with some speech reception in one ear at 95 dB. With all the excellent early teaching she had had, along with the stimulating oral environment, it was considered that she should have had more speech than she did at the time she entered the school. She continued to have marked difficulties with speech-learning throughout her school career, although her early schooling and opportunities for growth were probably as good as any of the 20 children. The report of her audiological examinations at Johns Hopkins when she was 16 may give some insight into her learning problems.

This is a problem of dysacusis. No SRT discrimination at maximal stimulus without her aid; only awareness of voice at 70-80 dB, with much delay in time. With her aid, she could identify words by audition alone at 46 dB, re normal minimal acuity. She does not typically use this capacity in daily conversation, and one must judge that her auditory experiences are highly inconsistent and unstable. This is one of the "different" attributes of dysacusis. There is an auditory reflex at near-normal levels, but entirely without meaning. Normal vestibular function with sluggish rotatory reactions -- system slowed up. No monitoring of her own voice. (See Figure 6.)

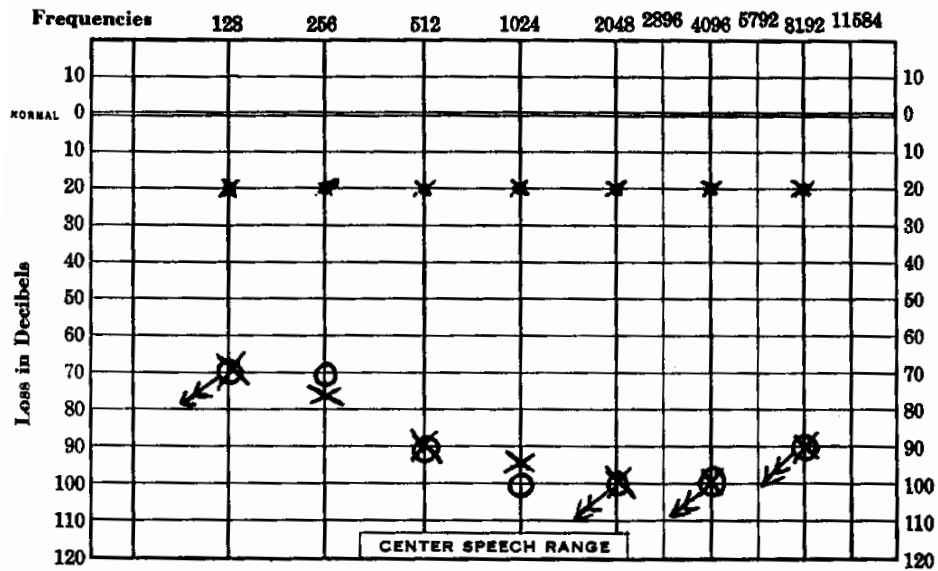


Figure 6. Wendy's audiogram.

It must be noted here that to the doctor and otologist who had known her all her life, Wendy was a profoundly hypoacusic child. After the Johns Hopkins evaluation she was reexamined at his clinic for possible central nervous system involvement, with resulting confirmation of his long-standing diagnosis: profound deafness with no apparent CNS involvement. To the extent that can be determined from psychological tests of CNS involvement, Wendy had always had a clean bill of health in this study, with good Bender drawings, excellent figure drawings, and good WISC Performance Scale scores with no indications of perceptual difficulties. (It must be remembered, however, that Tim also did well on all these tests in his early years, and he was very definitely a boy with severe neurological problems.) Wendy had, however, very definite language-learning problems. The summary of her WISC examination when she was 8 years, 9 months, is very similar to summaries of previous mental tests:

Wendy is an example of a bright child who begins to come into her own only when the work becomes academic and reading and writing emphasized, not just speech. Might she have benefited from earlier emphasis on reading, arithmetic, etc.? Perhaps a factor of emotional reaction to early pressure for speech is involved here. Also, she is a child like Rita who was hearing until she was two and suffered the shock of losing her hearing.

At this time, in her fourth year in school, Wendy was considered a good reader, but with great difficulty with speech. She was also described as a very good lipreader and "a bold writer." Her teacher wrote:

Very good written language, excellent straight language, picks up new language rules very quickly. Is tops. So deaf and can do so well. Reading is very good. I can ask difficult questions, even with reasoning, and she'll get it.

Something happened to Wendy's language learning, however, for this early promise in reading and writing was not fulfilled. At age 11 years, 11 months, she was achieving at the third grade level on the Stanford Tests, yet five years later at only grades five and four for paragraph and word meaning subtests, respectively. Summary of the work of her middle school years was made when she was 14:

Wendy has been a poor student for us until this year, when she moved from poor to fair and then in some areas to average. She has always had difficulty with speech and made little effort to improve it until about midyear of the last year. She has also been a poor lipreader. She talked without voice excessively out of school.

Wendy has worked harder this past semester than she has ever worked before. She has been shy and didn't volunteer much in class, partly because of her poor speech and partly because of poor language. She was always very slow in doing written work but it was always of better quality than her oral work. She is slow moving and always the last one in the class to finish a test or an assignment. This is a handicap in timed tests, such as the reading tests and the Stanford tests.

Wendy's attitude was described as much improved from this time on, with apparently increased motivation for improving her speech and lipreading. This motivation was undoubtedly due, in part, to

her growing interest in being able to attend the high school in her home town after she graduated from the school for the deaf.

Wendy's parents had always felt that for her, at least, the school had placed too much emphasis on speech and not enough on reading and writing. Wendy herself often complained to them that the teaching did not go fast enough, "the same thing over and over, too slow," with complaints also that she did not get enough chance to answer questions in class because the hard-of-hearing children were faster and always answered first. Wendy also found residential school living difficult, although she enjoyed many things about it, especially the sports.

Coming from a home where she lived a life of considerable freedom, she complained of too much supervision and interference with her personal matters at school, with no freedom to come and go, no noise allowed, not being allowed to wear shorts, and no dates allowed except under close supervision. These are familiar complaints from children in boarding schools, but they are of interest here in relation to Wendy's motivation and school progress. Wendy as an adolescent was described by her parents:

She has an attitude of a hearing child. She seems to show little feeling of rejection or of being different. This is her major strength as we see it.... She doesn't enjoy being deaf and will tell you so. However, she doesn't let this unbalance her. She seems to get a great deal out of life at this time.

These parental opinions were reinforced certainly by all studies of Wendy's personality and emotional growth in this study. In the play sessions when she was six to eight she was seen as healthy, active, alert, as summarized after a play session when she was eight:

Wendy seems as normal and healthy a girl as any seen. Always responds with a warm smile to greetings. Has obviously had good opportunities for growth elsewhere.

The analyses of her early art work agreed:

Personality: strong, aggressive, full of vitality.

Alert, probably intelligent, probably a leader. Pretty well-developed ego.

Eight years later her figure drawings yielded a similar thumbnail sketch:

Intellectually above average to superior girl. Desires to continue learning.... May have hostile thoughts but keeps them to self.... Experiences inwardly; would like to be grown-up. Is assertive, striving to perfect this... straight forward look at world -- a normal adolescent, healthy, adjusted.

Her final WISC examination at 14 years, 8 months, was summarized:

Wendy appeared as her characteristically friendly and self-confident and well-poised self. Her speech is still very difficult to understand: even when she reads questions aloud they are hardly intelligible. Her language understanding appears much better than her speech.... On the verbal tests... she showed more ability to generalize and to deal with abstract ideas than many of her peers.

Finally, her Rorschach record at this time suggested a good level of integration. It seemed that she had, perhaps, fantasies of life somewhere else being more pleasant. The Rorschach analyst saw her as fairly well organized, with nothing organic apparent in her record.

Wendy thus, although included here in this poor-learning group because of her Stanford Achievement Test scores, went through the school at the normal pace and graduated with the main body of the group of 20. As indicated above, the Stanford scores may have erroneously suggested a lower level of achievement than was hers, because of her slow working pace. She definitely, however, had marked learning problems, particularly with speech. It would appear that her parents may well have been right in believing that she would have benefited from a more intensive, remedial learning program by modern methods and from relatively less emphasis on her weakness -- speech, as would have at least half of this group. Recognizing her difficulties, they planned a careful program of home tutoring to help her make her way in the high school which she hoped to attend.

Undoubtedly her parents and Wendy were right, also, in their understanding of the effects of residential school living on her.

From the day she entered she rebelled against its restrictions, and at times developed "nervous" symptoms which substantiated their observations. For two years she disturbed them by her habit of widening and "popping" her eyes, and then later she developed another sort of tic of "neck-twisting or stretching" which they interpreted as a sign of tension. Another evidence of resistance to school living was the dislike she developed of "old" women (most dormitory supervisors were "old"). This dislike was so strong that when she was home she would no longer let her grandmother or any woman over 25 have anything to do with her. At home she was allowed to be on her own to play freely and she missed this at school, resenting the close supervision. As her parents wrote:

When this freedom to run in wide-open spaces, to ride her bike, was curtailed, we feel it made her unhappy. As an example, this incident will portray what we mean: when home on Christmas vacation of her first year in school, she in her own way explained to us what was bothering her most in her adjustment to her new way of life. The first time she went out to play she ran out the back door and around and around from back to front of the house and back again never stopping until we made her slow down. She seemed to have built up a backlog of energy over the months which she had to release all at once.... At home she seems to work off energy that most children release through speech.

However possibly exaggerated by loving, concerned parents, these words make a good deal of sense, not only about Wendy but about all young children residing in residential schools at ages when such placement is singularly inappropriate, in terms of both emotional needs and freedom to play and explore the world. Many perceptive parents are concerned with this problem which is exemplified in Wendy's history. It is a problem which should also concern educators of the deaf, since freedom to explore and be active are essential to the learning processes of young children.

Residential schools for handicapped children may need to rethink policies and philosophies and try to create conditions which are more truly homelike and more deeply embedded in the hearing community in which they are located. Some have long since done so and provided such solutions as very small groups living in cottages with substitute parents, with opportunities for relaxation and

refreshment in homelike activities instead of the rules, regulations, and curtailments of childish activity often necessary in dormitory living.

Of the remaining five students in this group of below-average achievers, four had in common what appeared to be unmet emotional needs and problems of personality development. One, Mary, will be introduced in the group of hard-of-hearing students and is mentioned here only in passing as a girl with emotional problems.

Leona

The third girl, Leona, presented a consistently sad picture through the years of unhappiness and depression, with a deprived and empty sort of home background and early childhood experience. Her Johns Hopkins examination indicated that she had more useable hearing than many of the children but had difficulties in utilizing it.

This is a severe hypoacusis, with some trouble in "auding." She has an SRT of 82 dB for double digits without her aid; with it, she is aware of speech at 32 dB, but has no definite auditory patterns beyond chance. Obviously the aid gives her a considerable amount of auditory support: her voice is quiet and well-monitored, with good rhythm and fair articulation. She is quite nervous in communicative situations, however, and apparently has some real difficulty in processing the auditory input (which is where the problem in "auding" no doubt lies). (See Figure 7.)

The analyst of her Rorschach record when she was 15 saw Leona as a depressed girl, who felt inadequate and damaged. From this record he would have predicted that she could not learn easily and that she would probably act-out a good deal. She appeared to feel empty and worthless. There had been little in Leona's life to make her feel other than "empty and worthless," except for what the school had been able to do for her. Essentially a rejected child with a poor and unloving family background, she gave evidence from her earliest years of emotional deprivation, and she presented many of the classic symptoms of such deprivation.

Little developmental data is known of her early life because of lack of adequate communication with her parents, but she was supposedly a normal, full-term baby with no infantile difficulties reported. Her mother reported by questionnaire that she had begun toilet training with her at seven months and that Leona had sucked her thumb from birth to school entrance, two bits of information suggesting early stresses. On school entrance she was described as follows:

She seemed very independent and mature for a four-and-a-half-year old. There was no hesitancy about trying anything, and her performance was usually accurate. She said some of the vowels in imitation.... There was evidence of some hearing. She was pleasant but had a suspicious way of looking at people.

Leona continued to "look suspiciously at people" and undoubtedly with adequate reasons in her early experiences. Her teachers reported that her parents seldom visited or wrote to her and "heaved

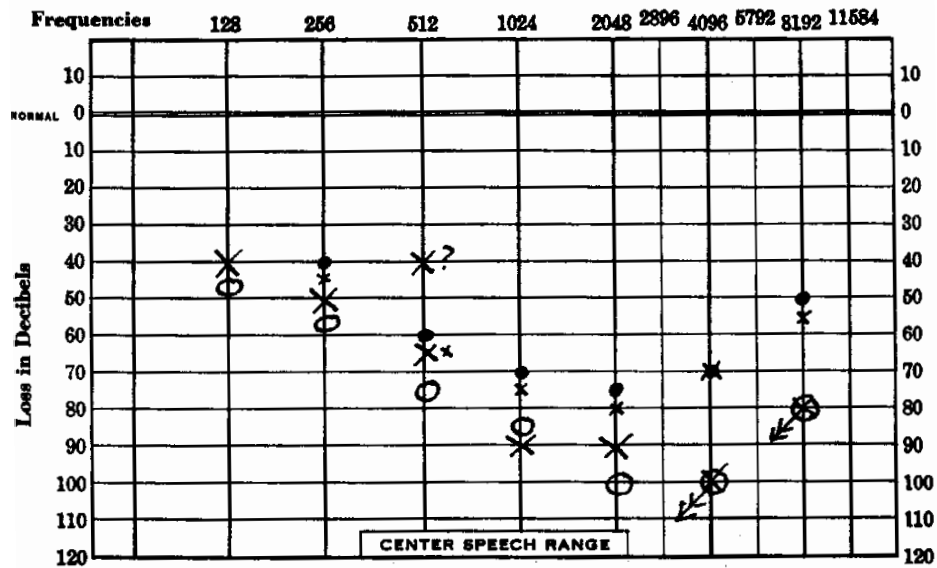


Figure 7. Leona's audiogram.

sighs of relief when they put her on the train to come back to school." Her mother once described her to her teacher as "no good... just a nuisance at home." This was not the familiar rejection of a handicapped child as different, as both parents of Leona were deaf.

Showing the classical behavioral symptoms of a deprived child, Leona had always caused trouble to her teachers by demanding much attention in the classroom. "The enjoyment she gets from being very naughty is her strongest characteristic," wrote one teacher when Leona was eight. Another, "Leona is her own worst enemy," or "She seems to be thinking about how far she can take Miss... today," and when Miss... finally "exploded," Leona would give her a big smile and hug her with affection.

Her teachers did not doubt she had ability to do the school work, for, although unable to function well in a class, she could do the work easily enough if a teacher sat down beside her and gave her individual attention. Her lipreading was described as good in her early years, "if in a receptive mood," and her speech as good and clear, one of her best achievements. At the end of her fifth year in school, her teacher summed up her impressions of Leona:

She will do almost anything to gain attention. Is a nail biter amongst other things. Probably behind her trouble is the lack of love or security from home. The other children like her, unless her naughtiness really interferes with them. When she is good she is very, very good. When she is bad, she is horrid. This is Leona.

Leona continued to be well-liked by her peers throughout school years, despite her moodiness and "naughtiness." Undoubtedly the "bad" behavior was more objectionable to adults than to other children, since it involved marked rebellion against adults' demands on her.

Early signs of Leona's emotional problems showed up in all her play sessions and art work, as well as in classroom behavior. Her teachers described her as unlike the other children in being extremely neat and methodical, meticulous in putting things away where they belonged. Similar behavior marked her play sessions in the years when she was six to eight. The outstanding characteristic of her play behavior was her over-meticulous and irritable

concern with tiny differences of size and shape in the toys, e.g., she fussed and fussed in one session to get the trees in a line and expressed annoyance that their bases were not exactly alike. She built Worlds which were rigid and schematic, in Buhler's terms, and suggestive of a child who was anxious, shut in on herself, afraid, or unable to make contact with her environment. With the MLT toys her play was immature, repetitive, and lacking in organization, giving the impression of severe repression and inability to use the materials freely. Her sessions were marked by frequent half-playful aggressive attacks on the observer with rubber knives or ferocious animals, partly to gain attention, no doubt, but attacks which also suggested in their restrained intensity considerable banked-down hostility.

In the fall of her fourth year in school, when she was nine, Leona was seen for a series of six, weekly play sessions in an attempt to find out more about her. Leona was very happy to attend these sessions and always reluctant to leave. She moved about more freely than in earlier sessions but always centered her play very close to the observer and referred everything she did to her for approval. There was a good deal of quiet house play with emphasis on mothering and feeding the baby. She alternated such play with more playful but aggressive attacks on the observer as in earlier sessions, and there was again a lot of the compulsive lining up of toys, with irritation expressed over imperfections in them. In one session Leona filled a nursing bottle with water, fed the baby, then was soon nursing on the bottle herself. At the end of the session she at first refused to leave, but finally, holding fast to the tiny bottle and sucking on it, she went reluctantly out the door. Here, certainly, no words were needed -- the language of Leona's behavior was very intelligible!

Leona's human figure drawings expressed pictorially the turmoil of feelings within her and her efforts to control them. The figures were always rather grotesque, with their very aggressive fingers and teeth, superabundance of hair, exaggeratedly long necks, and primitively drawn bodies. To the consultant who studied them, her figure drawings at age 15 expressed an "estranged feeling; withdrawn, outwardly conforming person."

Leona's preoccupation and irritation with details showed up also on mental tests which suggested how they interfered with her functioning well in a learning situation. She always tested as having average ability, with performance IQ in the 90s. At 6 years, 4 months, her Leiter report read:

Leona worked carefully and with more self-criticism than many children her age. In fact, she may well have been handicapped by her critical attitude which often seemed an over-consciousness of the possibility of error. She seemed a quite anxious child, hiding her face in her hands if she thought she had not done something correctly. She was very anxious for approval and praise and needed much encouragement to work actively.

The summary of her WISC examination at 15, Performance IQ 99, Verbal IQ 83, read:

Leona now appears as a very pretty girl with a gentle, soft-voiced way of speaking. She looks happier than she used to but still seems rather markedly lacking in self-confidence. She worked very carefully and slowly, thus penalizing herself on timed tests, and tended to be self-deprecatory about her ability.... She had trouble expressing her ideas, but did well on Similarities, showing a somewhat atypical ability for deaf children, the ability to generalize easily.

Summary school reports when she was 14 and 17 fill in more details of this troubled girl's progress through the school years during which she was always considered a poor achiever.

Leona is not a good student and is often not a good girl. She craves attention and will do objectionable things to get it. She wants to talk all the time but not very often about the work being done. She is rude to her teachers and supervisors often. All of her teachers feel that she could do better work if she would try harder and not argue all the time. She has failed in Science and Geography and her Arithmetic is poor. I wish she would grow up! Many people connected with the school have been very kind to Leona and she usually repays them with either indifference or scorn.

It is very difficult, of course, for a child who has had a deprived childhood to "grow up," for, as Erikson (1950) in his discussion of crucial developmental crises has pointed out, the going

on to a more mature stage of emotional development depends on the satisfaction of the needs of previous stages.

The report concluded:

In spite of these not-very-complimentary reports, which seem to all of us as fair as we can make them, Leona has made a good deal of improvement during the past years.... Her ugly moods are infrequent now-a-days, but she still hasn't learned to take much interest in school work. She gets absolutely no support from home, of course. In fact, she carries a great deal of the burden of responsibility of the care of her brothers and sisters. We regret that we have not done more for her academically. But we have tried!

The report written of Leona when she was 17 is given in some detail since it emphasizes strongly the unmet need Leona had had during all the previous years for help with her emotional problems, before much could be done for her "academically."

Leona has a history of sullenness, lack of interest in school work, and chronic trouble with teachers. Throughout the middle grades she showed slow but consistent improvement that has continued through her two years in the upper grades, mostly with regard to behavior....

One week ago, on Sunday afternoon, she hit one of the other girls and so was to be restricted from going skating in the afternoon. Skating is one of her great enjoyments here at school and her reaction was to sulk in her room for a short period and then announce that she was going home. When she was held back from getting her suitcase she backed up against a wall and put her hands to her throat, yelling and making choking sounds. When her hands were pulled from her throat by a teacher, she fell to the floor and began hitting her head on the floor and banging a nearby trash can. The teacher saw that she was not really hurting herself and let her wear herself out. The next two hours were spent in the supervising teacher's apartment on homework. She voluntarily returned to the apartment after supper to finish her homework and stayed for another two hours. At this time she was rewarded with ice cream and cookies and a chance to watch television for half an hour and told that it was because of her doing so well on her school work, that there was no punishment for her "temper" outburst of the afternoon.

In conference with the school psychologist regarding this incident he felt that we should tend to ignore her actions of the afternoon, but show interest and care for her. He further said that this was the first time to his knowledge that Leona had directed her hostility toward herself rather than others. The week passed uneventfully as far as I know, but it seems that Leona smiled less during this time and had returned to

her generally sullen look, though not as consistently.

Yesterday morning one of the girls in the dorm reported that Leona was going to kill herself -- she would supposedly not go to the basketball game and then go downstairs and kill herself. (The psychologist) suggested that Leona be watched indirectly and not given any opportunity to attempt anything, but she should not feel that she was being singled out.... At one point, however, when Leona was momentarily unaccounted for, both girls and teachers were looking for her and she was aware that she was under close surveillance. It seemed apparent that though her thought might not have been serious, she might accept this situation as a challenge.... One of the girls told me that Leona said that she would jump out her window that night. She did not want to go to the basketball game but was talked into doing so, and after the game she was heard to shout at some one on her floor and was then found crying in her room. At this time she went to the infirmary.

She admits having written on a piece of paper, "I want to kill myself." This note was seen by one of the other girls and then spread among the others. In retrospect, it is possible that most of the occurrences of yesterday were trumped up by the girls, but I find this difficult to determine fully.

There is no record of any psychiatric consultation at this time, but apparently Leona recovered and went on to graduate the next year, when she was 18. She planned to enter a business school the following fall.

The statement by the writer about Leona's school career when she was eight still sums up her problems and needs as well as a later one might do:

Leona is a girl of apparently normal intelligence, with no marked physical handicaps of any kind other than her loss of hearing. Despite the fact that she is considered to have more useable hearing than most of the children, she does poorly in school work except when individually tutored. All available evidence from school behavior, family history, and test behavior suggest strongly that Leona is unable to learn because of emotional difficulties. The consensus of opinion of those who know the family situation, where both parents are deaf, is that she is a rejected child. Thus, her inability to learn without the undivided attention of an adult, her focussing on MF in all play sessions, her disagreeableness towards other -- rivaling -- children, present the picture of a child who has always been hungry for affection which she never received. Her obsessive concern with minutiae in play sessions and her compulsive neatness in both classroom and play sessions suggest a child seeking to know just where she belongs in a well-ordered world, an anxious, little girl very much afraid of being wrong, of doing the wrong thing. From

her beginning here at school she has appeared as a child who needs much reassurance, love, to help her feel she is loveable and valued and capable -- none of which she apparently has experienced at home. She has never experienced unconditional love anywhere as yet!

It is a question, how far psychotherapy at a later age can make up for sustained and severe emotional deprivation in the pre-school years, but Leona showed clear signs as a young child of being able to relate to a sympathetic adult. It is an even more important question, how much the best-meaning teachers can help such a child, since giving her all the affection and emotional support she is begging for with her "ugly" behavior often appears to them like rewarding the bad behavior. It seems possible, at least, that supportive psychotherapy provided when this child entered school and first began to have trouble would have made growing up as a handicapped child much easier for Leona and made her school achievement more in line with her capacity and degree of hearing loss.

Tony

Two of the three boys also showed some of the characteristics of children who have suffered emotional deprivation and lack of environmental stimulation. Tony was one of the four boys who spent most of their early years in school in a special class for very poor learners. He, however, showed early signs of more capacity to learn, especially in his figure drawings, and he was the only one from this class to move out into a regular class in his middle school years, finally graduating only one year later than the majority of his peers.

Tony, a profoundly deaf boy of at least good average intelligence, was at times during his early school years suspected of having an atypical sort of deafness, but his Johns Hopkins examination at the age of 15 produced the following report.

This is a very deaf boy with considerable amount of residual hearing which he has not learned to use. GSR status

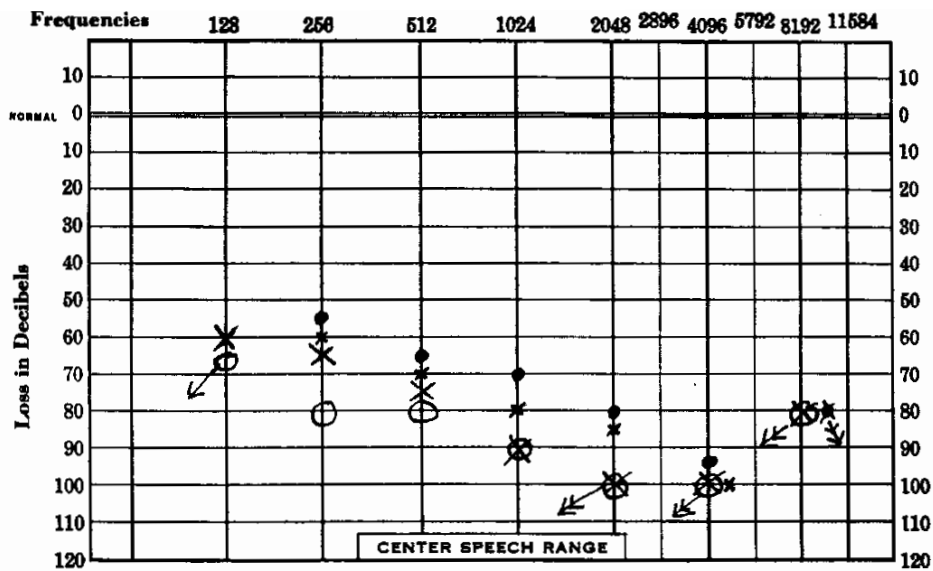


Figure 8. Tony's audiogram.

was excellent on all counts. Unaided, he is aware of various acoustic stimuli at 70-80 dB; with the aid at 46 dB. But this experience is not translated into auditory meaning. His voice is jerky and quite unmonitored. Apparently, the auditory experience is quite undifferentiated for him. (See Figure 8.)

Probably just as handicapping as the deafness were Tony's emotional problems of development, for which less was done in the way of rehabilitation. Tony, however, was one boy who enjoyed some psychotherapeutic help, from a graduate student who was an assistant at that time.¹ The report on Tony, who was then 11, after about 4 months of weekly therapy sessions, gives us a picture of what the therapist and his clinical training supervisor² thought of Tony at that time.

¹Richard E. Thompson

²Joseph P. Lord, Ph.D., Head Psychologist, Children's Hospital Medical Center, Boston

Tony's emotional problems seem to have been established in the earliest years of his life. He has a marked need to be loved and to be taken care of. Yet he is fearful of his need to be given love, undoubtedly as a result of unfortunate experiences in his early years.... Although the mother is reported to be devoted to her children, I have the strong impression that the mother has never really accepted her son wholeheartedly and may be actually rejecting without conscious awareness of doing so. Moreover, it is possible that his grandmother who was quite close to him and actually cared for him in his early years was his actual source of love. Her death before Tony came to school must have been a particularly upsetting experience for him. His leaving the home shortly afterwards to enter school seems to have intensified the boy's emotional state.

Tony has a strong conflict between wanting to be loved and fearing the consequences of such a desire. His marked restlessness and facial mannerisms (tics, etc.) are definite symptoms of this emotional conflict or anxiety. He reminds one of an animal who becomes very restless when he is hungry. Since he is utilizing so much mental energy in trying to cope with his inner conflict, Tony naturally does not have enough energy for other areas, such as learning. Moreover, his mental or emotional drives are oriented so much around his immature wishes that he does not have the emotional readiness for learning. Learning to Tony means that he will have to grow up; he has not had the energy or the desire to do that. The therapy with Tony has been a most interesting experience. There is no question in my mind that he is a very bright boy; in fact, I would surmise that his potentialities are basically much greater than a few of the children who are two or three classes ahead of him. It seems tragic that his emotional problems have interfered so greatly with his classroom work.

Much of the therapy to date has been oriented around establishing a relationship of trust and security between him and myself. I have been trying to meet his emotional needs by giving him candy and small presents. At the same time I am trying to help him to grow emotionally and lose his fear of his world. By establishing more trust in his environment through therapy, it is hoped that in time his emotional conflict will be decreased and he will then be motivated to grow up and become more mature in his attitudes and feelings so that he will be able to use his mental energy more constructively in his school work. Because of the nature and severity of his problems, this will have to be a slow and time-consuming process.

The deprivation suspected by his therapist probably came about because both his parents, who appeared devoted to him, had to work and he had lost his grandmother who had cared for him from infancy. The emotional trauma of her loss was described vividly by his

mother. When Tony was three and a half, his grandmother went away for nine months.

It was like taking the most important thing away from him. He was always looking for her. It sort of made him go into a shell. He would not stay with anyone.

She returned, but when she died a year and a half later, no explanation was attempted with Tony. His mother reported that his behavior changed suddenly with her death and that he still looked at her picture and said "gone." Did he still expect her back? No one knew and no one tried to explain her absence, a difficult job with a profoundly deaf four-year-old. Shortly after that Tony was taken to school and left there. It is hardly surprising to find his mother writing in the questionnaire about his early life that the most difficult adjustment he had had to make in his life was that of going away to school at the age of 5 years, 2 months.

Tony was supposedly born deaf and had deaf siblings. There is some question of possible birth injuries -- the birth was a breech delivery and his spine was described as "black for six months afterwards." He was an active baby who cried a great deal and had difficulty from the beginning of his life getting enough sleep and rest. Developmental milestones were precocious, with walking at nine months, and there were no serious early illnesses. His deafness was noted in the first few months of life and, although he had no preschool training of any kind, he was described in his admission interview at the school as "doing some of the exercises well and showing an ability to observe keenly."

Throughout his school years Tony was a slow learner, with numerous comments on his "nervousness." At first there was some question whether he could be kept in the school, but he began to quiet down and to do better in the small special class where he did not need to strive so hard, as he was easily at the head of the class. The competition in a larger class bothered him. Tony also had trouble outside the classroom, and when he was 11 it was reported:

Tony is very poorly adjusted to group living. He is very disturbed and is always trying to prove himself the best in

all ways. The other children get very tired of this and they don't accept him.... It seems to be an inferiority complex that makes him this way, but I have not been able to help him correct it this year.

Such behavior for a boy with Tony's problems is, of course, not unfamiliar, and usually needs more than the help of a sympathetic teacher to "correct it."

Tony's teachers had always believed that he had normal intelligence, and all his psychological tests corroborated this, with IQ scores ranged from 94 to 111 on his last WISC at 14. When he was a young child, however, he appeared so jittery that one often wondered how he could possibly focus his gaze on the speaker or the printed page long enough to learn anything. In early play sessions he moved about freely but did little but manipulate the toys. The first questions asked about Tony when he was observed in a play session at 5 years, 6 months, were:

Is he apprehensive about adult reactions? Has this any relation to his avoidance of aggressive animals or of any active play other than with the dolls? He moves about, plays briskly yet gives an impression of lack of freedom, somehow. There is a lack of expressiveness. Not five-year-old boyish.

A year later his first World Test session took place and was summarized:

He seems a very tense boy with jerky, rapid quality of behavior. Indicated delight in killings and other violent play. Disregarded E except for furtive peeks at her, until she smiled at an aggressive incident, then he showed her freely more aggressive play. People were definitely rejected. Was on the move continuously throughout the 30 minutes.

One year later, Tony built a World again in which aggression was rampant: a wide, empty sort of World with all living beings safely enclosed except for the policemen and soldiers.

His play was rapid, excited in tempo, rising to crescendo in the last 10 minutes of aggressive play. He was absorbed in this play with deep, emotional "straight-from-the-belly" sound effects.

Comments on his WISC performance at the age of eight give a characteristic picture of him in a learning situation.

He is quick to understand the nature of the tests but so quick and impulsive in performance that he makes many careless errors. He rushes at things, with many waste motions, fumbles nervously with the materials and can seldom stop to think or to study a problem.

As he entered his middle school years Tony was still greatly retarded, but his teachers still believed he had more ability than they had "stirred him into using." His attention was poor, he had not learned to read with understanding, he hurried through his work in superficial fashion. He seemed somewhat more relaxed, however, and not so full of nervous mannerisms. When he was 15, his supervising teacher wrote of him:

Tony came to us, aged 12, after seven years in the lower grades. He was in a very slow class, not having finished the work of those grades. He was a nervous wreck, full of tics and having "therapy" with Mr. Thompson.

She went on to say that he made some slow gains under a patient teacher and, because of his sudden great physical growth, was given a chance in a regular grade, where, although he had a good deal of work to make up, he worked better with children of his own age and size. No mention is made of it by this teacher, but one can suppose that the year of weekly play therapy sessions must have had something to do with the improvement in his work and the quieting of his "nervous" behavior.

Tony finished his school career in this regular, if slow-moving, class, but left school before graduation and entered a vocational high school in his home town. The last school report on him was when he was 16.

Tony is a very serious boy and conscientious about work. Always prepared and on time and usually very neat work. His main problem is that he cannot lipread easily and this affects recitation in class and prevents understanding of what other children say. Reading comprehension is also hard for him. He is extremely nervous and finds it difficult to concentrate on

any one thing. He often gives way to emotions and "blows his top."

Tony, thus, went out into the hearing world with very marked handicaps in understanding others and making himself understood by them. The school considered that he had excellent manual skills; we hope these will help him to a stable work life. He was clearly one of those children, usually boys, who might have benefited from more creative methods of teaching language which still need to be developed or adapted to teaching the deaf. Even more urgently, he needed and benefited from supportive psychotherapy to help him reduce the tensions which kept him a "nervous" boy with many tics and great difficulty in group adjustment throughout his school years. Had such help been offered earlier and continued longer, his learning difficulties might have decreased, his concentration improved, and his ability to attend increased. Who knows how much Tony's being "unable to use his hearing" was based in psychogenic problems?

Tony's Rorschach report when he was 14 described his basic problem as one of integration and assimilation. He seemed to lack a feeling of closeness to people and to have considerable difficulty with his own aggressive feelings. A lot of anxiety was present.

Similarly, the analysis of his figure drawings when he was 15 stressed the presence of fears, especially fears of expressing affectional needs and feelings of the inaccessibility of maternal affection. These two "blind" analyses supported to a remarkable degree the early hypotheses about Tony as an emotionally deprived boy whose unmet dependency needs were responsible, at least in part, for his learning problems.

Carl

The second boy in this group of poor achievers, Carl, was also a very deaf boy and, more importantly, one with very little verbal facility -- poor language intake and poor verbal memory. He also

seemed to have had an isolated and deprived home background, again because of family problems rather than lack of familial concern for him. He was undoubtedly born deaf, as there was deafness in the family, but otherwise was described as a perfect baby with no early childhood illnesses. The only unusual notes in his early developmental history were that he was bottle-fed until three and as a small child would go to bed only if his mother went with him and he shared her room. He had some preschool training after his deafness was diagnosed, but this was rather late, when he was more than three years old. At the clinic where his deafness was diagnosed he was described as appearing to be a very bright boy.

The impression of Carl's mental ability was confirmed throughout his school career by repeated psychological tests but never by his school achievement. His first teacher in his preschool days at home said that, while very bright with puzzles and other nonverbal tasks, he did not seem to know what speech was all about. During these important early years he was reputed to have been kept under very close supervision, hidden away at home, with very limited experience outside the home. There was a lot of parental illness which, with parents of fairly limited means and education, undoubtedly limited even his intrafamilial experiences.

Considered an average achiever in his earliest school years, Carl soon had to repeat one year's work. At the end of six years, it was clear he had real language-learning problems. His teacher's report at that time read:

He is only a fair lipreader. Has difficulty in reproducing what he has seen on the lips because his mind just doesn't seem to retain the thought too well. Gets little help from hearing... is discouraged easily. Speech rather poor and hard to understand. He experiences difficulty with any kind of analytical speech and doesn't enjoy working on it. Reading interest fair but ability to read and interpret poor... Like most insecure pupils, accomplishments depend upon his mood, and there are days -- in the minority -- when I am proud of him.... Carl is a slow thinker... a plodder. Along with his problems, he has a splendid sense of humor which helps him.

Carl's school life was made more endurable for him by the fact that he was always well liked by his peers. Throughout his school

years, however, his teachers continually commented on his great need for praise and affection, classical characteristics of the emotionally insecure child. As he grew older, this need for attention often led him to be exasperating to his teachers, as one reported, when Carl was 14:

This boy is less of a problem than I anticipated. He is odd, sometimes silly, but not obnoxious.... His facial expressions and other odd touches seem to be bids for attention. He cannot accept praise or help without some silly bit of behavior.

In the summary of his middle school years, the supervising teacher wrote that he had entered the middle grades very popular with the other children because he "had a way of entertaining them with long tales, expressed nonverbally, but with amusing facial contortions." He exasperated his teachers, who considered him a boy of average intelligence who was lazy and doing little work.

Carl is a miserable failure as a student. He is lazy and uncooperative most of the time. The teachers have been annoyed with him much of the time this year because he fails to do his homework.... He has done about third grade work this year and has failed in five out of six subjects. He is heedless, unstable, and unreliable. He has more ability than he uses, we feel.

There also began to be complaints from his peers about his behavior, with embarrassment reported by them about his "silliness." In the following year, when he was 15, the reports continued unfavorable.

Effort on Carl's part is almost entirely lacking. We all feel he could do better work than he does do. He is getting a very poor education because he does not apply himself. He still spends too much of his time being silly. He is often rude and lacks self-control.... Each teacher described him with the word "Lazy".... He is very immature for a boy of his age and does not assume any responsibility that he can avoid. He is getting a very poor education because we have not yet been able to inspire him to apply himself. He is at the bottom of a very poor class. Yet, whenever I talk to Carl privately on the subject, I have a feeling that he has been affected by 10 years in the school and I see the boy at his best

and am hopeful that he may be a "late-bloomer" and still may make great gains in the upper grades.

Carl, however, had experienced 10 years of failure in the school and it would have been remarkable if he had felt inspired to apply himself. He had never been considered as having more than average mental capacity at best, yet his performance on mental tests suggested more potential. On the Leiter Scale when he was 5 years, 4 months, his IQ score was only 98 but:

Carl in the examination gave the impression of excellent capacity. He was very quick to get the idea of an item. Many of his failures were near-successes and he was quick to see and correct his errors.

When he was 7 years, 11 months, his performance IQ on the WISC was 118.

Carl not only achieved a score indicating above average intelligence but his performance was qualitatively superior throughout.... His outstanding performance was with Block Design. He perceived the designs and relation of parts to each other quickly and worked at their construction with unusual maturity.

At the age of 14 years, 11 months, his Performance IQ was 124, but Verbal IQ only 63. His verbal responses were limited and either in single words or incomplete sentences; his vocabulary was extremely limited. Similarly, his Stanford Achievement Test scores at about the same age (16) were very poor: median retardation of over five years, about fifth grade level achievement, but with paragraph and word meaning at only the fourth grade level. This retardation is made more significant when we observe that five years earlier his paragraph and word meaning scores were at about third grade level, pathetically little progress in language development for a five year period.

If we look at the data concerning Carl's personality development and emotional growth, there is some evidence in the play sessions from ages five to seven of a change from a happy, expressive boy to one more subdued. At five:

Carl was energetic and quick in play, alert and deft in manipulation of the toys. One of the most expressive children in his age group, making funny faces, expressing delight in toys, etc.

In later sessions he appeared very submissive, with only a simple, schematic quality of play, but with real breaks of violence and aggression such as attacking toy animals over and over again with a knife. The writer's impression during these years was that Carl was an intelligent boy who was not adjusting well to an oral, residential school; that he needed, among other things, much more opportunity for free boyish play. He became increasingly subdued and unplayful through these years, perhaps reflecting his growing difficulties in school achievement and adjustment. At 15, Carl's Rorschach analysis suggested that he was quite an anxious boy who lacked integrative ability. He appeared to be a deprived boy quite depressed because he felt his deprivation was due to himself and he felt guilty about it. The picture seemed to be essentially one of a deprived and limited, but not emotionally disturbed boy. Analyses of figure drawing at that age showed a boy of fairly good, functioning intelligence but with rather bad feelings throughout towards female figures. He seemed obviously to want approval and acceptance, but didn't expect to receive much.

Carl's Johns Hopkins examination confirmed what we know of him:

GSR pattern very phlegmatic with extreme latency, close to sleep state. There is at least this much reflexive acuity. He functions about the same with his aid as without; there is awareness, but not even gross discrimination, at 66 dB. His voice is unmonitored, very "deaf." He seems to have some real trouble with language intake, with poor verbal memory by any mode of input. This is a very deaf boy, with little verbal facility. (See Figure 9.)

What can we draw from Carl's history that may be of use in understanding and helping such deaf children? First of all, as with most of these children, preschool therapy was meagre and totally inadequate for the all-important work which needs to be done in the very earliest years of life. These children must be helped to become aware of language, to develop their use of residual

hearing, and, as Groht (1958) among others has put it, to get words into their mental life at the normal developmental age for such acquisition (i.e., long before the age of two to three). Secondly, because of his especially impoverished early childhood, he would have benefited greatly from a rich nursery-school program with informal and personal speech stimulation, with the main emphasis on enriching his experience and providing a conceptual basis for language learning. This would have helped to build more social confidence and emotional strength in this boy. Instead, the experience of failure in a formal school program was added almost immediately to the burden of his hearing handicap and impoverished childhood.

Like all the poor learners in this small group of 20, he needed such improved methods of language teaching as are coming more and more into use with nonlearning and underprivileged hearing children. Essentially, a large part of his learning problems may have differed little from those of culturally deprived hearing children, with his deafness only an additional handicap. We need to know if this is

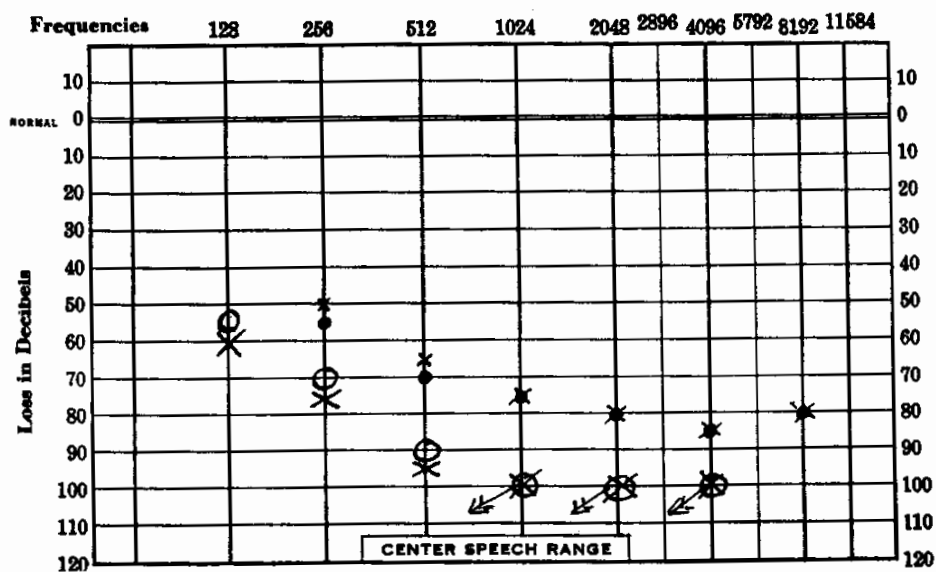


Figure 9. Carl's audiogram.

truly so, to learn by experimentation with new methods of intellectual stimulation and teaching. We now are beginning to realize that great numbers of our hearing children do not thrive on an overly academic, formalized approach to school learning. This boy may well have been such a child, one who might have thrived better in an imaginative activity program of learning.

Students such as Carl are familiar to all educators of the deaf. This boy was of superior intellectual capacity, as estimated by varied nonverbal tests. He graduated from the school at the age of 15 and planned to become a printer. No teacher recommended further schooling for him, even in a trade high school.

Doug

Doug was the third educationally retarded boy in this group. At the age of 16 years, 10 months, he tested with a median retardation of 5 years, 9 months, on the Stanford Achievement Tests, but with achievement on paragraph and word meaning at only third grade level. Although he was always rated a poor learner and was little better off at the end of his school career than the poorest achievers, Doug kept on in school and graduated only one year later than normal. Probably greater facility in speaking and in lipreading kept him from appearing quite so retarded educationally.

Doug's history showed evidence of possible birth injury. Premature and cyanotic at birth and, suffering from severe nutritional disorders, two months after birth he weighed only about six pounds. He was hospitalized for the first two months of his life. Undoubtedly having a severe hearing loss, he also appeared to have other handicapping conditions, probably related to the paranatal difficulties: an excitable, easily distracted boy. As the audiological report from Hopkins described him:

GSR: very spastic, hyper-alerted pattern. By routine audiometry, he gave repeatable responses by descending technique at levels 10-20 dB better than these; this could not be duplicated by ascending technique. His aid was out of order,

without his aid he was aware of voice at 74 dB. There was no evidence even of gross auditory discrimination. His voice is quite unmonitored and fluctuates markedly in both stress and intonation. This is a severe hypoacusis, and he has not learned the use of his residual hearing; in general, he gets very little from auditory experience. (See Figure 10.)

Aside from the birth difficulties and the illness of his first months of life, little is known of Doug's preschool years. The family questionnaire was not returned by his parents, nor were they ever met by the writer. According to secondhand reports from his teachers, developmental milestones after his first year of life were normal and no other serious illnesses occurred. He had considerable early teaching, three times a week, and was considered a good learner by his home-visiting teacher. However, about six months before he entered school, she reported a marked loss of interest in lipreading and that he would no longer look at her. In the writer's experience, this loss of interest in watching faces and in verbal communication may occur with young deaf children if the teaching has been too

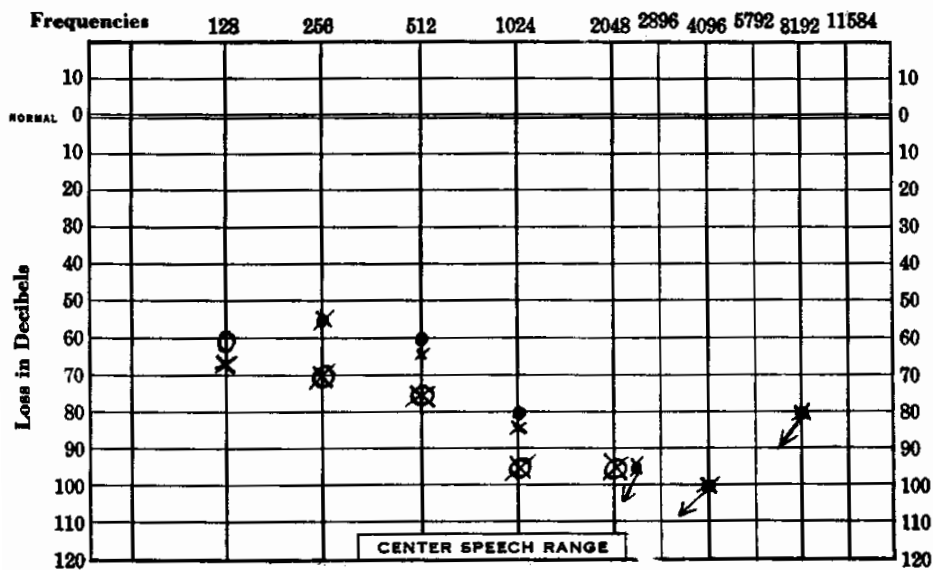


Figure 10. Doug's audiogram.

formal and imposed on the child, rather than being the more natural mother-child sort of teaching. According to the teacher who saw him for the admission interview, however, at the age of 5 years, 7 months, he could lipread a bit and approximate quite a few words.

During his early school years Doug was described as talking a great deal but not intelligibly, his speech being the poorest in his class. When writing he was much more sure of himself, but when talking he got the words all mixed up. His first teacher emphasized his restlessness and distractability which probably had an organic basis.

Doug was most nervous, but very interested from first visit to school. Thought he would be a crackerjack, but he soon showed he would have trouble with lipreading, not with speech at this stage. His span of attention was always very short. I had great trouble in getting him to calm down, as he was very tense. His parents paid little attention to him, seldom wrote to him.

At the end of his fourth year in school, his teacher wrote:

He has a corkscrew smile... so unhappy, it's terrible. Can't lipread to save his life. Written language good and can read.... Speech is worst, is like his personality, out it comes in a jumble. "A jack in the box." Say something and he's awirl and jumpy. Gives impression of being miles away much of the time. Poor coordination.... Can't concentrate on auditory training, not possible for him to do it.... Still has an unpleasant voice quality when he gets excited. Nerves still affect his speech badly. Family shows little interest in him. He is a most considerate and polite boy, but still has that jack-in-the-box quality alternating with a dreamy disposition.

Throughout his middle school years there were many detailed reports about Doug, as he was a continual challenge and/or exasperation to those who tried to teach him. He was frequently called "charming" or "delightful" by one teacher, but "slow-thinking" and "distractable" by most of them. A revealing paragraph about Doug when he was 14 read:

I have begun to see the limitations of this boy. His lack of reasoning has been apparent in much of the thought question work.... His appearance is deceiving. He nods his

head and says yes and no in the appropriate places, but his written work often shows very little understanding of the why's and how's. I have repeated words and ideas in as many ways as I can dream up, yet I doubt that Doug could give the meanings of more than five new words from our work... His lack of recall is hard to believe. I have seen evidence that Doug does study. He simply can't remember the facts or meaning which we discuss and find in the stories.

A year later his four years of previous schooling were summed up by his supervising teacher and reveal a somewhat changed picture:

This has been Doug's best year with us. He has made more effort and there has been some small improvement in his achievement. He is an excellent lipreader, grasping ideas -- but not the language in which they are clothed -- and passing them on to all, concerned or unconcerned! His ability to understand written language is still extremely limited. His attention is constantly shattered by irrelevant matters and his memory is poor. He does not really learn the new words that come up daily to be added to his vocabulary. He is always pleasant and cooperative and often sees a thing that needs to be done -- a thing that has no bearing on the lesson perhaps -- but which shows thoughtfulness on his part -- and does it. He is still too inquisitive about other people's business and too eager to pass on the news. This is partly a cause of his inability to study. It seems hard for him to concentrate on all school subjects but we appreciate his social charm.

Essentially Doug has not changed much from the small boy he was when tested by Mrs. Fiedler in '52. She describes his performance on the World Test so: "...even in this situation with interesting toy materials, Doug showed himself as a scattered sort of child, easily distracted by impinging stimuli, with a short span of attention. He had all the toys out on the floor but did little with them. His main interest was in motor activity and investigating the room, 'talking' all the while at a great rate." (She concludes with these words:) "This sustains the picture of him as a boy not ready for sedentary classroom activities but one who might benefit by the equivalent of a 'reading readiness program.'" Unfortunately, after ten years in the school, Doug still seems "unready" for the program which we offer. We have tried to help him but, I am sorry to report, with poor success.

Despite his poor learning record, Doug always tested as having average mental ability on nonverbal tests, but there were indications of difficulties in integrative activities. Like those of most poorly achieving deaf children, his figure drawings were always immature and distorted. His Leiter IQ at age 6 years, 7 months, was

95, his WISC Performance IQ at 8 years, 9 months, was only 89 but at age 15 years, 9 months, it was 97, with a Verbal IQ of only 63. In this final test of mental development:

Doug was as friendly and open as always in the testing situation and, unfortunately still performs in an erratic, impulsive and jittery fashion. He tends to rush ahead, make errors, jitter over them and then correct them as best he can. Despite these characteristics of performance which undoubtedly lowered his scores, he scored within the average range on the Performance Scale. On the Verbal Scale it was a different story, where Doug had as much difficulty as any of his age tested. He had great difficulty in reading and understanding the printed questions and of expressing his ideas when he did seem to understand. His speech was intelligible three-fourths of the time but extremely limited in vocabulary and structure; he seldom spoke in connected sentences. His Vocabulary weighted score was 0.

As noted above in the supervising teacher's final report, Doug's play sessions behavior had a

hectic quality to it. His tempo was quick, jerky, disorganized, never still. His coordination was poor. He was jabbering and making sounds continually and his body appeared in perpetual motion -- "nervous" rather than expressive motion.

Comments on this behavior when he was eight read:

It seems physically impossible for him to focus on anything. Behavior is much like that of badly retarded children. Is he a case of emotional disturbance or brain injury rather than mentally deficient?

Doug would appear to be a child for whom a complete diagnostic examination should have been made long since, with the question of organicity and/or emotional disturbance. Which or both? It would be important in terms of differential educational treatment and/or psychotherapy to know.

As we have seen, no such differential diagnosis was ever made, and Doug continued in the school until he was over 18. His figure drawings when he was 15 and 16 appeared to the consultant to show much anxiety and impulsivity. "An impulse-ridden boy, anxious to show how strong he is but feels unacceptable. Similarly, his

Rorschach record at that time found not so much a lack of motivation as a difficulty in integrating things.

He appeared to show basic difficulty in establishing his own identity. Doug's behavior had always suggested that he was greatly concerned with his human relationships, and that in fact he probably felt considerable anxiety about them. Throughout his school years his teachers complained that he spent too much time and energy keeping track of everyone's doings and all the school gossip. Undoubtedly, such social contacts offered some degree of comfort and assurance to this boy who was having so little academic success. He was in general well-liked by his peers. It was his social affability and success in getting along with people that was probably his best asset and the one which helped his parents to feel confident about his future, believing that he would "jar loose and really get going soon." When he left the school at 19 Doug hoped to be able to attend the high school in his home town, although his teachers had recommended immediate job training for him.

Discussion

When this group of below-average achievers is considered along with the three poorest students discussed in the preceding chapter, it is evident that in addition to the needs of early differential diagnosis and appropriate remedial education for deaf children who have learning problems associated with atypical sorts of deafness and neurological problems, there is an equally pressing need of services for the multiply handicapped child with emotional problems. There needs to be deeper understanding of emotional problems in relation to the learning process and provision of therapeutic education for deaf children who cannot learn because of these problems.

Six of the nine poor learners, showed clear signs of being in emotional difficulties: Dan, Matthew, Leona, Carl, Tony, and Mary, a hard-of-hearing girl discussed in the following chapter. If we add to these six Judy (see Chapter 6), an average achiever with serious learning problems associated with emotional difficulties,

seven children, or about one-third of the group, needed therapy of one kind or another before they could be expected to achieve up to capacity.

If this can be so in one of the best schools for the deaf, a small school with an ideally low teacher-pupil ratio, one can imagine what the situation may be in many larger, less well-endowed schools for the deaf. We are not saying that emotional problems are necessarily more frequent among deaf than hearing children, but only that they may be more intensified and prolonged with the deaf child because of the auditory handicap and because deafness makes both their recognition and treatment more difficult.

In considering the emotional problems of the deaf child, early placement in a residential school must be considered as one of the possibly complicating factors. Whether residential schools for the young deaf child are the best possible solution or not, for practical reasons they will undoubtedly be considered necessary for a long time to come. One speculates, however, about the potentially unfavorable effects of separation from home and family on the normal developmental problems of some children. Some objective studies have been made of groups of deaf children in contrasting school environments. The results are suggestive but hardly conclusive. None has studied the problem of separation trauma with the very young deaf.

There is some clinical evidence in the case studies presented here that some children's growing-up appears to have been made more difficult by separation, and that preschool children vary greatly in their emotional readiness for separation from the security of home and mother. For example, in a report by Lord and Thompson written when the latter was engaged in play therapy with Tony and several other troubled boys in the school, the following quote is found.³

Separation is probably never easy for any child. Why some children can master this stress and why others cannot is

³Lord, J. P., and Thompson, R. E., Psychological assessment of the physically disabled with special reference to deaf children. Unpublished report, 1960.

an important question. Certainly, we know that many deaf children respond satisfactorily to a residential setting; but the fact remains that it seems to be an especially prevalent problem in the non-adjusted children referred to us.

The authors discuss the possible disturbances of mother-child relationships resulting from the birth of a handicapped child and their effect on the child's need to feel loved and secure, and they go on to say:

We may conclude from the above evidence, which we regard as only suggestive at this stage of knowledge, that one possible reason why some deaf children do not make adequate adjustment to a residential setting or show adequate progress in academic learning, while others do, is that these non-adjusted children were particularly vulnerable to the stress of separation from family. Evidently, the separation added one more problem to earlier, yet to be resolved, problems to tip the scale toward behavior and/or learning maladjustment. Emotional readiness for transition from home to residential school is therefore a crucial need, over and above the inevitable problems emanating from physical disability in general and from deafness in particular.

Farber, a psychiatrist working with deaf and hard-of-hearing children, has suggested that it might be wise to begin academic instruction for all children within the home, since it is difficult to predict which children will be retarded because of emotional dependency and the traumatic effects of mother-child separation. As he concludes:

I am submitting, however, that there will be no improvement academically in the severely dependent deaf child until the threats to his security and his compensating controlling dependence upon the mother are recognized and graciously submitted to. This hardly can be done in the schools where both discipline and the teacher's divided attentions militate against it (1964, p. 351).

The significance of this problem for such children as Leona, Judy, Dan, Tony, Matthew, Carl, and possibly to some degree for Lucy, Brenda, Mary, Cathy, and Wendy, immediately comes to mind.

The question of residential school placement for very young deaf children is challenging: We need to study the effects of

such placement and ways of making these effects less harmful. With hearing children, for instance, the use of small "family" units, of consistent substitute mother figures, etc., has been shown to mitigate some of the ill effects of institutional living for young children. In some countries, however, such as the Netherlands, institutional living for the deaf is considered so undesirable that programs have been established using foster families for children who live too far from the schools to attend on a day basis.

Many schools and hospitals have long since questioned the old policy common to institutions: "No parental visits, less crying," etc. (Bowlby, 1954; Robertson) and are experimenting with ways and means of abating separation trauma, such as taking in children for short visits at first, or having parents stay with them or nearby until the children are familiar with their new surroundings. This means, of course, that adequate school facilities need to be available at not too great distance from each family, so that no child need be separated by hundreds of miles from his family, making frequent family contacts difficult.

It seems important, also, to seek ways of evaluating the sturdiness of a child's emotional health, of evaluating his maturity and readiness to function in a group learning situation. Looking back to the evidence of the play sessions with the children when they were four and five years old, it appears that, as with hearing children, play observations are one source of clues to a child's emotional maturity. The relevant and often predictive quality of the play sessions suggests also that they might be of use to the teachers of deaf children, as an aid in stimulating awareness of the children's inner lives and of their feelings for school adjustment and achievement. The histories of these children seem to emphasize above all the fact that young deaf children, like all children, need to be emotionally ready to benefit from formal teaching; that they need rich backgrounds of experience and emotional security before they can learn language; and that learning goes on and can be understood in other ways than through the production of speech, although speech and verbal language may be the ultimate goals.

More research is needed on the effects of different types of

school environments and curricula on the social-emotional growth of deaf children, i.e., studies comparable to those done by the Bank Street College group of the impact of school on the personality development of hearing children (Biber, 1961; Bower, 1961; and Minuchen et al., 1964). A limited study the writer made using the World Test with seven- and eight-year-old deaf and hearing children, for example, showed marked inter-school differences in child behavior that appeared to be associated with differences in school environments. The schools for the deaf, with their small classes and close teacher-pupil association, provide ideal opportunities for setting up such studies and devising creative environments for learning as described by Biber (1961) and others.

The way of the young deaf child is hard and too often his first experiences with school learning are those of great difficulties and failure, much more so than is true of hearing children, whose early school experiences may be similar but seldom are marked by such unrelieved lack of success. Hearing children, fortunately, have varied opportunities to learn in home and community living. The deaf child, especially in the residential school, is much more dependent on the school and on his teachers for what he learns and what he becomes.

Chapter 5

THE HARD-OF-HEARING STUDENTS

Under ideal circumstances of educational opportunity, 5 of the 20 students who entered school together would not have attended a residential school for the deaf. They would be classified as moderately to severely hard of hearing (55-73 dB) rather than deaf, and they needed an educational environment more appropriate to the hard of hearing. One (Ch. 2, Joan), was an outstanding student throughout her school career and graduated two years before most of the group. Even so, she was 15 years, 7 months, before she completed elementary school and was considered ready to benefit from a school for hearing children. The other four hard-of-hearing children, Cathy, Lucy, Mary, and John, were, in varying degrees, less fortunate in their adjustment to and benefit from the school.

Cathy

Cathy is discussed in some detail, as a child for whom education with the deaf appears to have been especially unrewarding, although other factors may have played a part in her marked underachievement. As revealed in repeated psychological tests and observations, Cathy was a girl with superior intellectual abilities and creative potentialities, with a relatively moderate hearing loss, who was only a mediocre student throughout her school years. She showed an obvious aversion to school learning and lack of motivation to achieve anywhere near her capacity. Why? Two major factors seem prominent in her history: (1) she was not profoundly

deaf and should not have been in a school for the deaf, at least not for so many years; (2) developmental problems of an emotional nature appeared early in her history and persisted throughout her school years. Hypothetically, the first factor may have aggravated the second.

When she entered school, Cathy was a small, sturdy little girl of 4 years, 9 months, who already had considerable speech. Coming from a small-town, American-born family of average middle-class status, she was the outcome of an apparently normal pregnancy and birth, weighing more than seven pounds at birth and described as a lively baby. Developmental milestones are reported as normal, with the exception of speech development. There were some slight suggestions of emotional difficulties in Cathy's early years, with extreme sensitiveness to any sort of punishment and nightmares following punishments. Since her home group consisted of many adults, there was probably more than usual stress on a small, active child, with demands for good behavior and respect for property and adult preferences. However, she was described as an independent small child, with a love of animals and physical activity, and apparently lived a fairly normal life as far as contact with the hearing world and freedom to experience it were concerned.

The cause of Cathy's loss of hearing was uncertain, with no known pathology other than abscessed ears in infancy. The loss was suspected before she was a year old and confirmed at a leading medical center when she was two. One can realize again the great advances in the treatment of defective hearing in small children made in the past 15 years when one reads the recommendation from this eminent medical center. Although Cathy's deafness was diagnosed as only "partial," the parents were advised to wait until she was five before doing anything about it. Thus, she had no early training and lacked the benefit of consistent use of a hearing aid until she entered school. Even after she entered school, where she had the benefit of good amplification through group aids during her school day, she did not obtain an individual hearing aid until her second year of school. It seems very probable, with the early discovery of her hearing loss, that if Cathy had had the needed auditory stimulation and training at that time, she might well

never have been a candidate for a school for the deaf.

When seen at the school a year before her entrance, Cathy was described by her parents as hearing only loud noises, the voice only faintly, and as communicating by pantomime and "repeating noises." However, the school audiologist who examined her at that time described her as having a good voice, as reading lips and saying at least 10 words, and as trying to say a good deal -- "she speaks quite well." At that time and throughout her years in school Cathy tested as having a loss of about 55 dB for the speech range in her better ear. When she was 15 and examined at Johns Hopkins, her report read:

Pure-tone measurements of the left ear were done with the right masked. The GSR was stable and of good status. Unaided in the sound-field, she has an SRT of 56 dB and a discrimination score of 64%; with the aid, this improved to 40 dB and 72%. A different hearing aid might well help the situation further. Her voice and speech are of good quality; she can use the telephone in the right ear without her aid. She can function essentially as a hard-of-hearing child. (See Figure 11.)

What may be learned about Cathy in her early school years that might illuminate her achievement record? Can we learn what caused her to be 3 years retarded at age 16 and 5 years retarded in Word Meaning on Stanford Achievement Tests, with a WISC Verbal IQ of only 82 compared with profoundly deaf peers less retarded educationally who had Verbal IQs in the 90s?

Cathy seemed so promising in her early reactions to reading readiness work that she was recommended for placement in a class a year beyond the group with whom she entered. Nevertheless, she proceeded through school with her age peers. As later school records show, however, despite her auspicious beginning and despite her large amount of hearing, her spontaneous speech, and her good discrimination of sound, she was never considered a better than average student. Five years after Cathy's school entrance, the supervising teacher described her: "She has so much hearing, but mental ability?" Her language work was described as not good, "although she has so much hearing she should not have to be here" (i.e., in a school for the deaf). She was spoken of as "babyish" with problems of relationship with her parents, and there were

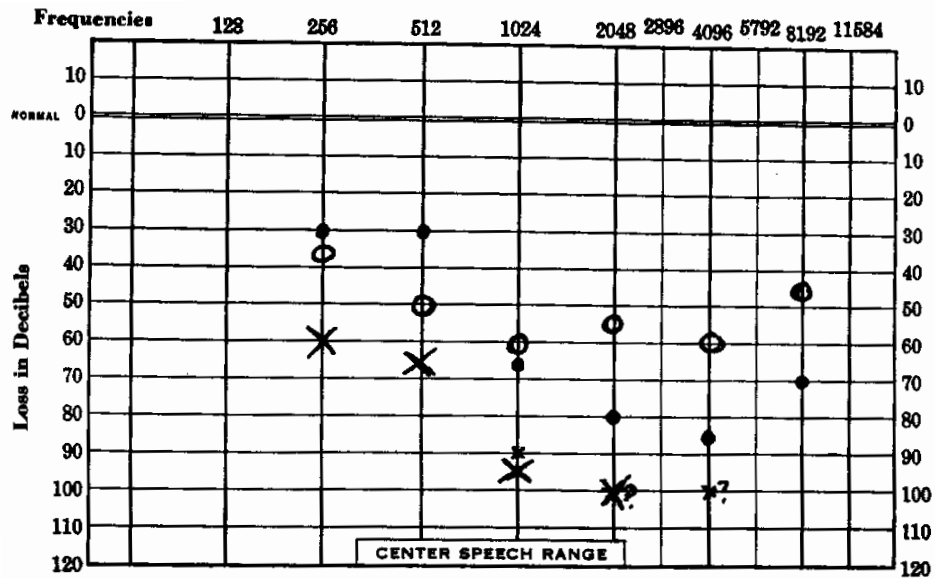


Figure 11. Cathy's audiogram.

some difficulties with other children because of "bossiness."

Four years later she was considered top girl in her class but with poor oral language; as reported by her teacher:

In grammar she can tell you exactly what form of a verb should be used under certain circumstances, but in spontaneous speech she rarely uses the correct form the first time she makes a sentence. She has always been much too confident, then carelessness creeps in... Her speech should be as normal as a hearing girl's, if she cares and works at it.... Her speech has always been quite intelligible....

One must wonder if Cathy would have had such language problems if she had been educated in a hearing environment where verb forms and sentence construction would have been learned naturally instead of through formal lessons in grammar and where motivation to speak like her hearing peers might have been higher. Somewhat later she was described by a discerning teacher as seeming not challenged enough and not working to capacity, but, nevertheless, as always "out

in front" in her class. She was described at this time as "flippant" and needing much guidance and direction, also as having a marked interest in hearing guests with whom she would always converse freely. In her earliest years of school one of her teachers wrote:

Cathy can give back unknown phrases through hearing alone ... (language) has improved. She now goes ahead by herself and produces good original language.... An avid and quick reader.

Teachers' ratings in her late school years contrast with the early picture: "limited" creativity; a leader in her group but not always to good ends; a girl to be encouraged to proceed to high school but not to college. She had finally been promoted to the class ahead of her in the hope that it would be challenging and improve her effort and attitude which had not been satisfactory. She left the school for the deaf one year before most of her classmates graduated, when she was 16, and went on to a regular high school.

What insight into Cathy's problems do we find in the results of psychological tests and observations? First of all, Cathy had always performed with at least high average intelligence on nonverbal tests. When she was 5 years, 4 months, she obtained an IQ of 112 on the Leiter Performance Scale, with the following comments by the examiner:

Cathy impressed me as a steady, mature little girl in this examination for whom the test score might represent a minimal estimate of her ability. She came into the room, sat down and went to work with speed and efficiency and was distracted from the tasks at hand by nothing in the room or in herself. She showed good critical ability: saw errors and corrected them and was independent in her approach to the tasks.... She appeared as a stable little girl rather lacking in expressiveness of behavior. Probably a child of at least high average intelligence.

When she was 7 years, 9 months, Cathy was given the performance tests of the WISC on which she achieved an IQ of 115:

Cathy's performance was superior on all the tests except the Block Design. She was quick to understand the nature of

the tests, thoughtful in her approach to them and worked easily and well. She gave most of the responses to the Picture Completion tests verbally and understood directions given verbally, although she was not wearing her hearing aid.... Unlike most of these children, Cathy tended to verbalize, to talk to herself when doing the tests, commenting on her own performance, correcting herself, etc.

Cathy's figure drawings also suggested above average intelligence. Her art work was always more interesting than that of most of the children, suggesting a more active fantasy life, richer concepts, as well as artistic giftedness. A summary of Cathy's art products during a period of the first five years of her school life observed:

Interesting, mature... seems imaginative, with a sense of humor... considerable spontaneous aggression... considerable anxiety, with need for feeling of security, affection, ego building. (Seems) aware of deafness.

Final intelligence testing when she was 13 years, 8 months, confirmed the early impressions of superior intellectual potential: WISC Performance IQ 135, Verbal IQ 82:

Cathy was very easy to test, as she has good understanding of speech and almost normal-sounding speech herself. The puzzling thing about her is why a girl of such obviously superior intelligence and with her amount of hearing should do so poorly on the verbal tests. Several of the profoundly deaf children did better than she did on tests involving ability to generalize and abstract, showed much better funds of information, better vocabulary and understanding of Comprehension questions which involve understanding of everyday situations. Is she perhaps a girl who has been educated too long with the deaf or is her poor performance related to personality traits? She still shows some of the "sulky" and rather indifferent attitude which was characteristic of her when she was younger.

Cathy's human figure drawings at this time were excellent, suggesting normal psychosexual maturity as well as giftedness in art. With tests of visuomotor functioning, such as the Bender Visual Motor Gestalt Test, Cathy always performed in superior fashion.

While such tests of intellectual functioning do not offer explanations of her under-achievement, projective tests and observations are more enlightening. Cathy was first observed in play ses-

sions when she had been in school less than six months. At that time she appeared inexpressive and inactive, doing little with the toys and having nothing to say. There was some quiet aggression in her play and she watched the observer closely for her reaction to it. There were no expressions of delight, surprise, or enjoyment, as with most of the children; her play had a very subdued quality to it. At that time the observer summarized:

Seems immature, rather fearful, subdued, a sad sort of child. Seemed to have little spontaneity, fun or sparkle to her. (The questions raised were) has this child had much chance to play freely? Is she held down at home? Ever full of fun? Fearful of her own aggressive feelings?

At about this time Cathy's supervising teacher reported that she had "slumped" in her school work, despite her auspicious beginnings. One can only hypothesize that Cathy may have been showing some of the effects of separation trauma which are often observed in the behavior of these very young children in a residential school situation, as well as reaction to residential living and education with the deaf.

Just a year later Cathy had her first play session with the World Test toys. At this time she built a closed, rigid, and schematic little World within an area of about three by five feet. Again she was silent and inexpressive, although by now well-acquainted with the observer. A second World built a year later when she was seven was still a closed one with some signs of rigidity, but it was better organized. Her behavior was again subdued and inexpressive. A few months before this, Cathy had another MLT play session which was much like her first one. She appeared subdued and poker-faced with no friendly reactions towards the observer. It was all quite conventional play with the exception of an isolated unit: a doll identified as "Father" was in bed with a snake on top of him, an alligator at the foot of the bed, and a knife beside the bed. She said that the snake and alligator would bite him, but would say no more, although she had her hearing aid on and could undoubtedly understand questions asked.

All of these projective play sessions suggested considerable anxiety and controlled feelings of aggression. The observer's main

question was why Cathy was so subdued. It was interesting to consider, not only in relation to possible separation trauma but also in relation to her parents' reports that she had suffered considerable physical punishment at home before they understood that her "disobedience" stemmed from her hearing problem. They also reported considerable stress in keeping her quiet in a house full of adults.

Cathy's Rorschach record when she was 15 confirms some of the earlier impressions of her difficulties. Her record was a very rich and full one, comparable to that of a hearing individual both in quantity and quality of responses but it also gave a picture of rather marked emotional problems. Cathy seemed to reveal acute fears of being overwhelmed by her own impulses, a fear of destruction and of mutilation. She seemed very angry. On the positive side, she showed more ego strength (i.e., flexibility and creative personality assets) and more potential for development than many children in the group. The record suggested the probability of acting-out behavior.

Such "blind" analyses must, of course, be taken with reservations but this one confirmed remarkably well impressions from the very early play sessions and observations of Cathy's school room behavior, as well as teachers' reports of her "sullenness" and "indifference." She had, indeed, always appeared to this observer as "angry." Reports from her mother confirmed the rebelliousness against school which had always been fairly clear. She described her attitude towards school as not good, that Cathy saw no real reason for school work, thinking in her early adolescence that she was ready to go to work at a "real job." She also complained that the teachers did not understand her and took no interest in her -- typical adolescent complaints, of course!

The tragedy in Cathy's long-standing grudge against school was, of course, that she had superior intelligence and good potential for college work which she would undoubtedly never realize, since apparently neither her family nor her teachers recognized this. One speculates rather sadly that this potential might have been realized if with the early recognition of her hearing loss she had received the stimulation and teaching she needed in her preschool years; if she had had a more appropriate and challenging educational

experience in a hearing environment; and if she had received the needed help with her developmental, emotional problems. Such cases of wasteful under-achievement are, of course, frequent with hearing children also, but in Cathy's case her inappropriate and prolonged education in a school for the deaf must be seen as a responsible factor in her aversion to school and low achievement, and probably in her emotional problems as well.

Lucy

Lucy was another child who might well have benefited from a school for hard-of-hearing rather than deaf children. She had slightly more hearing loss than Cathy, her unaided hearing for speech being 64 dB in her better ear. She had always tested as having average intellectual ability, as contrasted with Cathy's superior endowment. Although her Stanford Achievement Test scores were comparable to Cathy's, she made an easier adjustment to school and was considered a better student, probably because she was less rebellious. At age 15 years, 8 months, her median number of years of educational retardation was 3 years, 5 months, but about 4 years on reading subtests. On her WISC at 14 years, 7 months, there was less discrepancy between Verbal and Performance IQ scores, 96 and 107 respectively. She kept pace with the most advanced class of the group of 20 students throughout her school life.

Lucy's loss of hearing was supposedly congenital (cause unknown) and was suspected in infancy and definitely diagnosed by age 2 years, 6 months. At this time her speech was just beginning to develop, and she had Tracy Clinic correspondence training as well as weekly attendance at a preschool class for the deaf. Given a hearing aid at three, she unfortunately wore it only for short periods daily. Her examination at Johns Hopkins confirmed earlier ones:

This girl has a very distorting hypoacusis, with considerable residual hearing. She is aware of speech at 56 dB without her aid. She has an SRT of 36 dB for double-digits with her aid; she is unable to listen down to minimal levels for intelligibility measurements with spondaic words. With a combin-

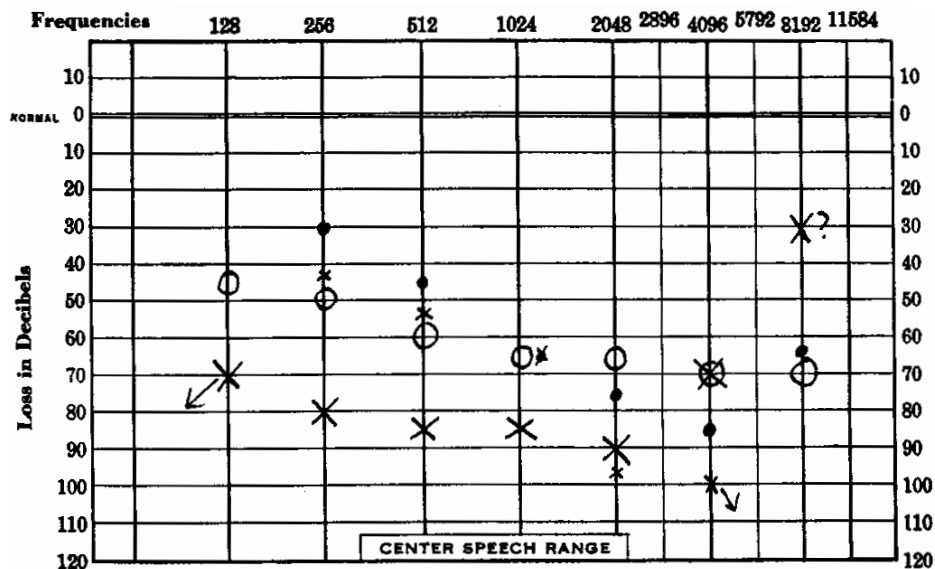


Figure 12. Lucy's audiogram.

ation of looking and listening, she does very well. (See Figure 12.)

She was described in school records as using only a few words, and appearing as a tense little girl with a rather harsh, tense voice on school entrance. As with Cathy, one wonders what early consistent use of the hearing aid and more adequate stimulation and auditory training might have done for Lucy. According to school records, Lucy didn't begin to wear an individual hearing aid regularly until 1954, when she was seven.

Turning to psychological test records and observations, we see that Lucy had always tested as having average intellectual ability. Early MLT play sessions revealed that she was very expressive and talkative with a lot of gaiety and charm, as reported at 4 years, 10 months:

She seems to be bursting with talk. Must she be limited to the painstaking speech drill? She has natural speech rhythms and imitates easily what you say to her. Her approx-

imate speech is excellent. Could she not learn speech naturally if she wore her aid all the time? Lucy would thrive on a good nursery school program.

In similar play sessions two years later Lucy now appeared immature compared with others in her group, with a short interest span and little organization or creativity in her play. However, she still verbalized almost constantly, although appearing more subdued than in her earlier sessions. The observer's summary of the play sessions expressed some questions:

Why so little obvious growth in two years?... How much speech progress is there? It seems as if there should be much more as she had so much to begin with. It still appears that she is in the wrong educational setting for her who is not a profoundly deaf child.

It is interesting to note here that Lucy's mother later told the writer that Lucy stopped talking at home after she entered school and she wondered at that time if she had done the right thing in sending her to a school for the deaf. Lucy naturally got over this and resumed normal talkativeness at home, but her mother continued to wonder if she might not go to public school sooner than most deaf children.

A final projective play session with Lucy when she was seven showed her as building a rather constricted World with a low level of organization. The final summary read in part:

In all the projective tests, then, Lucy appeared as a little girl with considerable ability to communicate verbally, expressive, dramatic, but markedly immature in her ideation and interests as reflected in these play sessions.

The question arose as to whether she might be somewhat mentally slow, but all intelligence test scores were within the normal range, as were her human figure drawings. She did well on all tests of visual perception and visuomotor tasks. Her behavior in testing situations was always somewhat immature, however, with a marked dependency on the examiner and a "flightiness" of attention.

At the end of the first five years in school Lucy was described by her teachers as a very natural child, but quite insecure and un-

stable, and as a good lipreader and fair reader, depending on her changeable emotional moods. A teacher wrote:

I have been able to find little in familiar language that Lucy can't give back through hearing. She repeats words, sentences and rhymes quite accurately and seldom makes a mistake on syllable stress pattern.... She had some trouble in learning to write, with poor memory and lack of independence in her work. She has always been a very willing worker.

In Lucy's first two years of middle school her behavior was considered irresponsible and "silly" at this preadolescent stage of development (behavior which sounds quite normal for that age), but she gradually buckled down to working steadily and was considered a very satisfactory student. She was described as having continual difficulties because of using exaggerated mouth movements, still an "outstanding fault" in her 10th year of school.

Lucy's final WISC record is similar to those of previous examinations: Performance IQ 107, Verbal IQ 96:

Lucy was another girl who performed in a manner very similar to her eight-year-old Wechsler performance. She was friendly and talked a lot, but her speech was not always easily intelligible, perhaps because of the braces on her teeth. Her responses were always in complete sentences. She is still very easily flustered, striving hard to work fast and do well but lacking in self-confidence and becoming easily upset in the face of difficulties.... On the verbal tests Lucy, of course, had much less difficulty than her peers with more hearing loss, but her scores are just average, with Vocabulary rather low. The definitions she gave were good ones, expressed in clear language, but the number of words she knew was limited.

The analysis of her Rorschach record suggested good ego development but also some isolation from other people. She also appeared to feel defective and she displayed quite a bit of continual anxiety. She seemed fairly well integrated, with average potential.

As she neared the end of her school years this observer's summary written at the end of her fifth year of school still was pertinent:

Here is another girl, like Cathy, who has considerable hearing and entered school with understanding of and some use of speech. She is probably not as bright a girl as Cathy, but

as far as school tests go, performs only as well as many who are profoundly deaf and making steadier progress in school achievement. Has it been disadvantageous for Lucy to be in a school for the deaf? Probably, but there was no better place for her to be. She would appear to be a child who could learn more readily by methods other than those appropriate for the profoundly deaf.

One has also to consider the matter of Lucy's immaturity and lack of emotional stability. There were factors in the home which must have contributed... as did her undoubtedly very difficult adjustment to residential school placement at the tender age of 4-6. Perhaps, as suggested by her teachers, her amount of hearing has been just enough to confuse rather than help her? Has enough advantage been taken of her gaiety, her spontaneity and dramatic capacity in the school learning situations? Or have the demands of sitting still for long periods of time, of attending to matters not too interesting to her, of the lack of freedom to play in and roam the out-of-doors such as she had at home, all been particularly inappropriate for this child?

Finally, is she a child who will be able to make an early shift to a school for hearing children?

Only the last question had a definite answer, nine years later, as Lucy graduated from the school for the deaf at the age of seventeen and was ready to enter high school.

Mary

The two remaining hard-of-hearing students, Mary and John, had hearing losses which were probably somewhat more handicapping than those of the previous three, as their audiograms suggest. The Johns Hopkins report of Mary's examination read:

GSR: good test on all counts; right done with left masked in all pure tone audiometry. Without her aid she has an SRT for double-digits of 48 dB. With her aid this score is 28 dB; 36 dB for spondaic words; discrimination score, aided, is 44%. There is extreme distortion here, and a genuine tolerance problem, but hearing is useful and meaningful for her. She uses a telephone on the left ear without an aid. This is sensori-neural hypoacusis. She can function as a hard-of-hearing person. (See Figure 13.)

This girl, however, did more poorly than any of this group of

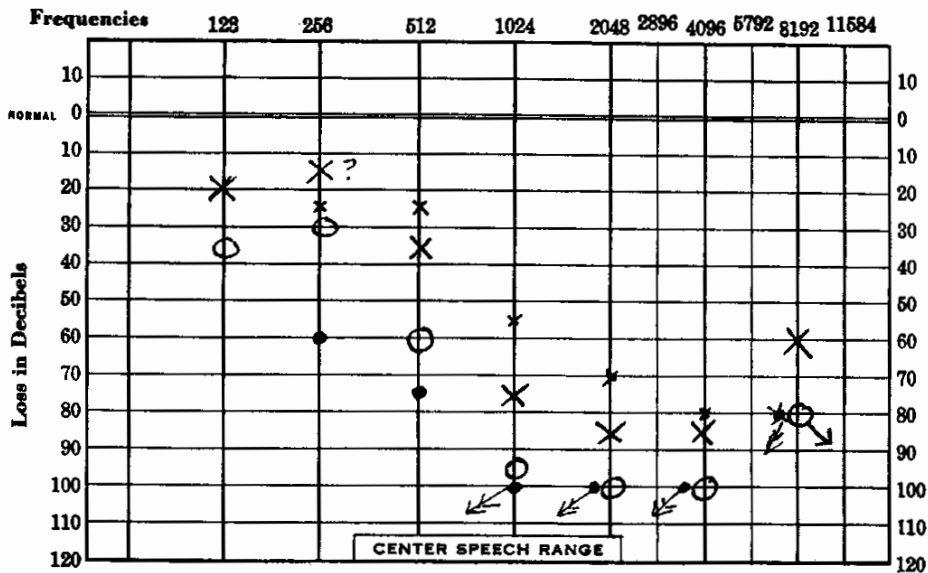


Figure 13. Mary's audiogram.

hard-of-hearing students, in fact she was one of the poorest achievers among the 20 studied. Ranked as second in the larger group in amount of residual hearing and as sixth on the tests of speech perception, she ranked fifteenth in achievement as measured by the Stanford Achievement Tests. Despite the early and continued impressions of her teachers that she was a girl of "limited ability," Mary had always tested as having normal intellectual capacity. Her early Leiter, WISC, and Goodenough IQs were all in the vicinity of 100 and her WISC Performance IQ when she was 14 was 124, and another WISC examination by an independent examiner at a later date produced a similar IQ.

Mary worked on performance tests with speed and accuracy, except with Coding where she proceeded very slowly and seemed to have difficulty in remembering the symbols. She had to point out each model with her finger before copying it in the proper place. The difficulty with Coding, i.e., in dealing with symbols, was interesting in the light of her reported difficulties in language

learning. In her middle school years a teacher wrote of her as follows:

She has a great deal of hearing which she depends upon but she has extremely poor memory and is able to do only routine work. Thinking, in any serious consideration of the word, is quite beyond her.... Her speech and behavior are of a child who is much deafer than she is and much younger... language poor... vocabulary very meagre.

Mary was obviously able to think, as revealed by her WISC test performance, but she had great difficulties in expressing her ideas verbally. The difficulties in self-expression appeared to be related, at least in part, to her personality characteristics of shyness, self-doubt, and easy embarrassment, which had been notable since her early years.

A review of Mary's developmental history showed nothing significant in birth, neonatal, or early history except the meningitis which caused her loss of hearing at the age of 15 months. Before this she had been using words "in normal baby fashion," suggesting that no retardation had been present. She did not enter school until she was 5 years, 6 months. At that time, she was speaking but not well despite two years of a weekly preschool class for the deaf. Again, like the other girls, she owned but had not been consistently wearing the hearing aid which might have aided in preserving the language gains made before her illness.

Mary was described by her first teachers as being "able to do anything in auditory training" and as finding speech learning easy. Yet, 10 years later her voice sounded more deaf than it had on school entrance and, despite her residual hearing, her scores on Word and Paragraph Meaning of the Stanford Achievement Tests were at only the fourth grade level. At the end of her first five years in school, her difficulties were reported as "remembering words and sounds, not in producing them, and great difficulty with spelling." It was also noted that she was not a very striking personality and needed to be more outgoing.

There are various hypotheses that might account for Mary's failure to achieve despite good intelligence and considerable amount of hearing.

First, it is quite possible that we may see in Mary's language

disability further damaging results of the meningitis.

Second, the nature of her hearing loss with its specific problems of recruitment may have made language learning more difficult. However, her problems did not lie in hearing and understanding, but rather in remembering.

And third, emotional problems were certainly associated with her learning difficulties. The writer's impression of Mary was always of a pale, shy child with an air of helplessness and anxiety about her.

Looking back to early play sessions with Mary, one finds two sessions with World Test toys at 6 years, 5 months, and 7 years, 6 months, which reveal her as a quiet child, sober and busy. She built rigid and enclosed Worlds which along with her rigid procedure of choosing toys suggested a child who was too orderly, submissive, and anxious.

In another play session at 7 years, 9 months, she presented a somewhat different picture, flitting about the room with no sustained attention, with a "flat, pale quality to her play which had an aura of anxiety" marked by much frowning, complaining about the toys, and persistent attempts to cuddle up close to the observer. When the supervising teacher was asked about Mary at this time, she agreed that she had noticed a change in Mary who was now called "fussy" and "bossy" and described as not getting along in her group. Her work which had been good was no longer so. The teacher believed that Mary was worried, anxious, and easily irritated, but could give no reason for the change.

At this point it is quite possible that some supportive psychotherapy might have helped Mary and put her back on the path of good school achievement. Nothing like this was available, however, and Mary kept along with her class through her first five or six years. She then became a member of a slow-moving class along with Carl, Leona, and Doug. This did not help her and she was returned to her original class in the hope that it might stimulate her to better work. She did not remain there for long but was returned to the slower class where her teachers felt she was better off, since she seemed more secure and less frustrated.

As Mary neared the end of her school career, the consensus of teachers' opinions about her was that she could do only simple work

such as that of a nurses' aide, where she might succeed because of her happy disposition and willingness to work.

Mary, then, may eventually be happily settled in a simple job situation, but there remains the question of what her potential was. Early tests of intellectual functioning showed scores in the average range only, but with notes on her "excellent, sustained power of attention" and power of self-criticism (Leiter Scale at 6-5). Her WISC Performance IQ at 8 years, 6 months, was similar with comments on her "quick understanding on all the tests" and superiority on Picture Arrangement, a subtest which usually is difficult for the young deaf child. Her figure drawings at this time suggested superior ability with Goodenough IQs in the 120s. These suggestions of a higher capacity were borne out by two WISC examinations by independent examiners when Mary was 14 and 15. All performance subtest scores were superior except that Coding and Performance IQs were both 124, but Verbal IQs about 50 points lower. She was quick and accurate on mental arithmetic and had an ability to generalize and abstract that was superior to most of the group, yet her Vocabulary was markedly low and she had great difficulty in expressing her ideas despite easily intelligible speech. As suggested, these difficulties may well have reflected some residual effects of the meningitis, but by that time certainly considerable emotional overlay existed. Her WISC record at 15 reported that she

still shows the same shyness and lack of self-confidence characteristic of her earlier years. She tends to become very embarrassed and self-deprecatory when she runs into any difficulties in the examination.

In her Rorschach at age 16 she showed a global approach and an inability to look closely and analyze. Her record seemed immature and the "blind" analysis described her as "a fairly disturbed girl, borderline. Quite infantile." There appeared no clear picture of organicity but there were some signs of it. She appeared to the Rorschach analyst as being in need of psychotherapy, but he raised the question as to how much she could benefit from it at that stage of her growth. Certainly, as a young child she had needed it and might have benefited greatly from it, as well as from intensive

special teaching to overcome what appeared to be a specific language disability superimposed on her hearing loss. This latter need she had in common with about half of the group.

Fortunately Mary had a devoted family and from all accounts led a fairly normal adolescent life at home, and got along well in casual contacts with the hearing world. The unused potential and the need for supportive psychotherapy were certainly not peculiar to Mary nor even to the deaf, as unfortunately such needs are widespread in all our schools. However, such needs when unmet are particularly unfortunate for a child already handicapped by defective hearing. In order to overcome the hearing handicap, a hard-of-hearing or deaf child needs, even more than most children, a strong, healthy personality and skilled remedial help with specific learning problems.

John

The fifth hard-of-hearing student was one of the few in this group to have a clear history of paranatal difficulties. He was premature, weighing only three pounds at birth, and had a precarious first year of life. After his first year, however, he was reported to have thrived and his developmental milestones from then on were within normal range. John's defective hearing was suspected in infancy but not definitely diagnosed until he was two. From that time until he entered school he had considerable speech and hearing therapy, but on school entrance his speech was not intelligible. Again, like the other hard-of-hearing students, he had had a hearing aid but had used it very little before that time. When he entered school he was described as follows: "appeared to hear all sounds that were made nearby but soon paid no attention to them." Here is the now familiar picture of a child who might have benefited greatly from continuous use of an appropriate hearing aid from an early age and from more consistent and meaningful auditory experiences. His hearing loss had always appeared on school pure-tone tests to be about 55 dB for his better ear. The report of his Johns Hopkins examination when he was 16 read:

This is an alert, communicatively responsive boy; he learned the phrase "galvanic audiometry" on one presentation. His speech is good.... The test-picture was consistent: unaided SRT of 54, with very poor discrimination; aided SRT of 38 dB. All in all, he does very well. This is sensorineural hypoacusis with severe acoustic distortion. He needs visual cues to round out the acoustic information which he gets; with a combination of looking and listening, he can function quite well in normal communicating situations. (See Figure 14.)

Throughout his first years of school John was considered a poor to average learner and quite immature in his behavior. At the end of his first five years his teacher reported that he had little wrong with his speech except for omission of Hs, that he was a good lipreader, and that he had very good language except for careless errors. Throughout his middle school years he continued to be easy to work with in class, undoubtedly because of his relatively large amount of hearing, and he could do good work when he "settled down

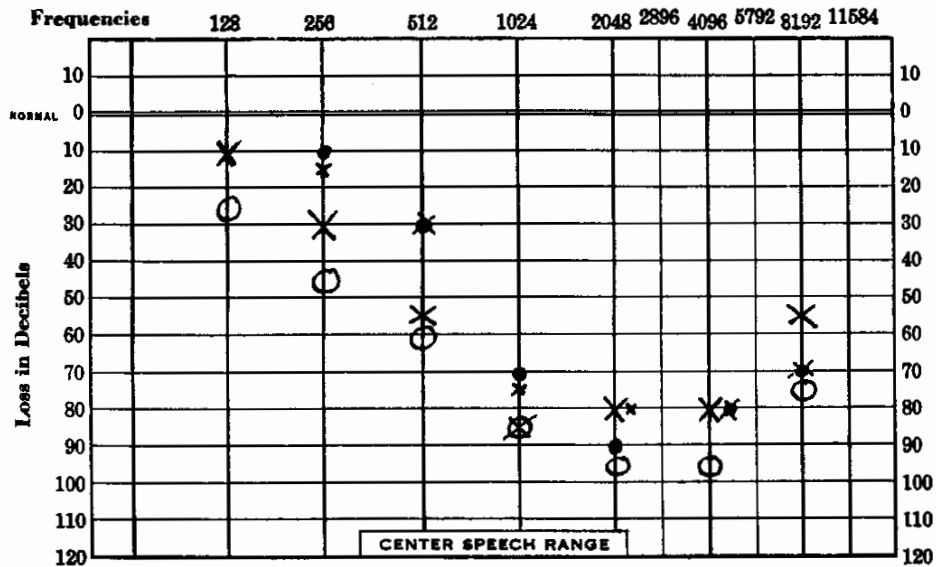


Figure 14. John's audiogram.

to it." However, he continued to be "careless" and "impulsive" in his behavior. His supervising teacher wrote:

John has a great deal of hearing, so much that if he did not have other problems, he would probably not have needed a special school. Language has been very difficult for him to learn.... School is not very interesting to him, as he prefers people and sports to school subjects.

.... Frequent periods of confusion when new material being presented and this may be related to his type of hearing loss and its cause....

He has hearing enough to function as a slightly hard of hearing person, if he will put a little backbone into the job.

Reports from later school years are similar, stressing that he "needs to grow up," "capable of good work but lazy," "can talk very well but most of the time can barely be understood," and "loses his temper easily." The lack of motivation is obvious from his school reports, so that one wonders how much his inappropriate attendance at a school with the deaf was responsible for his restiveness and lack of interest.

The hints of "other problems," the impulsive behavior, the language learning problems, plus the fact of his prematurity, suggest that this boy may have suffered minimal neurological damage other than the hearing loss. His human figure drawings when he was 15 and 16 suggested organicity to the expert who analyzed them, as did his WISC subtest scores. Most deaf children excel on the Object Assembly item, often obtaining spuriously elevated scores due to much experience with such puzzles. At ages 7 and 14 John was markedly poor on both the Object Assembly and the Block Design subtests, apparently handicapped both by his impulsivity and by what appeared to be real difficulties in visual perception and visuomotor organization. However, his Rorschach record was described as a rich record revealing a more mature personality development than that of many of the boys. He was seen as able to deal adequately with his own emotional conflicts and able to reach out to other people. The Rorschach revealed no signs of organicity, in contrast to his figure drawings and WISC performance.

It seems possible, then, that this hard-of-hearing boy experienced some of his learning and personality difficulties because of

minimal neurological dysfunction. In addition, he always tested as dull-normal to average on mental tests, with the consistent difficulties with visuomotor tasks.

On his last WISC examination he did not do nearly as well on the Verbal Scale as many of his profoundly deaf peers, and his Vocabulary score was very low. At age 14 his mental age level of performance on a recognition-of-pictures vocabulary test was only 7 years, 3 months.

Despite his slowness and his special problems, John did well enough in school to keep up with his class and was no more educationally retarded than the average class member; but unlike John, most of the others were profoundly deaf. Under the ideal conditions of adequate preschool therapy and special help in school as a hard-of-hearing child, John might not have needed to attend a school for the deaf. In any school, however, he might have been somewhat slow in his academic achievement. High school attendance was recommended by his teachers, but he would probably have considerable trouble keeping up if placed in a highly academic, college-preparatory program.

Discussion

These five students, while they benefited from their attendance at the only educational facility available to them, a school for the deaf, needed a school or classes where they might have advanced more rapidly and been integrated in a hearing world at younger ages. O'Connor (1960), writing of children in another oral school for the deaf, stated that while children with losses of 65 dB or more usually need special education for a few years before integration in hearing schools, those who can transfer are ready by the age of eight or nine. This certainly seemed true of Joan, and probably of Cathy and Lucy, as we have seen. Examination of the achievement test records of this group of five shows, with the exception of Joan, relatively less retardation at the ages of 10 to 11 than 5 years later (Tables 2 and 3). One wonders how far the reasons for this increasing degree of retardation lay in the pro-

blem of defective hearing, and how far they lay in the effects of being educated in a program designed for the more profoundly deaf.

An even more important question is whether these hard-of-hearing children might not have had to apply to a school for the deaf if their preschool training had started earlier and been more intensive, especially if they had had consistent use of amplified sound to facilitate learning through hearing, and if there had been a good program of education for their parents. This need for special facilities for the hard-of-hearing is recognized by schools for the deaf who are often reluctant to take in such children, but there are still only minimal provisions for such children in most states.

The histories of these hard-of-hearing children emphasize, first of all, the importance of early and differential diagnosis of hearing disorders. This is also equally important for the more profoundly deaf, of course. For such diagnoses to be made, obviously, all children who fail to respond in normal fashion to auditory stimuli, for whatever reasons, need first to be identified. This is accomplished in a rather hit or miss fashion in this country. Smaller, more homogenous countries such as England, the Netherlands, or Denmark do a better job (Buchli, 1963; Rjskjaer, 1960). In England, for instance, as part of the National Health Program, each infant's hearing is screened during well-baby clinic examinations (Ewing, 1960; Galbraith, 1964; Whetnall, 1960). To ensure that all children with hearing disorders are identified at an early age, perhaps examination of their auditory behavior should be compulsory, whether in the hospital at birth or through screening procedures later in infancy set up by federal or state public health authorities. Until reliable testing procedures are developed and such examinations required, however, we must continue to depend on the alertness of mothers and the awareness of the medical profession for early identification of deaf infants. An intensified program of public education would help as would more emphasis in medical education, particularly for pediatricians, of the importance of discovery and early therapy for the child with defective hearing. Awareness is too often lacking that therapy in the first year or two of life is all-important for the aurally handicapped child, and that the things he needs should be started years before he is old enough to enter school.

Early identification and diagnosis of the child with hearing problems is only the first step, for if diagnosis is not followed up by adequate therapy it is useless. Here we meet the great need for more widespread and adequate early preschool therapy for all children with defective hearing. The recent national survey of education for the deaf has revealed that at least half of the preschool deaf in the country lack any early teaching (Advisory Committee, 1965).

The quality of the teaching should also be considered. Pre-training, for instance, segregates deaf children, provides tutoring only once or twice weekly in a highly formalized teaching program, and keeps mothers in an audience role. Too often teachers of the deaf, however knowledgeable in their own field, have had no training in nursery school methods or in child study and general childhood education. As a result, their methods are often watered-down versions of those appropriate for older children, with the ways that young children best learn quite ignored. By school-entrance age, such children are frequently reluctant to watch and they resist teaching which has been forced on them by inappropriate methods. One can only speculate about the notable lack of drive to learn, particularly evident among the boys of this group. There was one exception. We believe that his motivation to learn undoubtedly had its roots in a close and encouraging relationship with his mother. This kind of relationship is, we find, fostered by parent-oriented guidance programs such as the fine program of the Tracy Clinic in this country and several programs in England, the Netherlands, Denmark, and Israel (Buchli, 1963; Rjskjaer, 1960; Cohen, 1964).

These programs emphasize the essential role of the parents in the early education of the deaf child, and the need for programs to guide the parents in fostering communication with their handicapped children. Denmark, for instance, has a nationwide program for aurally handicapped children which aims to keep the children in their own homes until they are seven. The program utilizes special teaching combined with enrollment of the children in regular nurseries and kindergartens. The parents are considered the all-important teachers of deaf children in their early years, as they are for hearing children, as Kendall has summarized:

...whatever the role of the specialist teacher of the deaf, and whenever this is to be brought into play, the parents' own part is one of central importance, demanding from them a degree of knowledge, understanding, and insight with which they are often imperfectly equipped (p. 56/8).

We need facilities available to all parents of aurally handicapped children, whether centered in large cities or provided on a mobile basis to outlying areas, where they may learn this understanding and skills for helping their children.

The philosophy of teaching in these centers, as Galbraith goes on to say, and as many other educators of the deaf have emphasized, needs to be grounded in thorough knowledge of developmental stages and related needs of all children. They especially emphasize the fostering of the listening attitude in the small deaf child, aided by amplified sound, with no early forcing of returning speech. As Cohen has summarized:

We have found, too, that we should avoid insisting that the child say a word when he is not ready, that this is detrimental to the development of a normally pitched voice. I believe that pressure, anger, or signs of displeasure will never make the child want to talk or watch the speaker's face. If what we say and do is interesting to the child and arouses his interest, the child will listen and watch (p. 845).

Levine has emphasized this same point of view:

Another provocative question that comes to mind is the psychological effect of speech-corrective practices in a context of speech development. With the normally hearing child, speech development is only mildly controlled by corrective practices. The child is permitted his quota of "baby-talk." The aim is to get speech development under way and psychologically enjoyed; corrective practices can wait until the child is psychologically and physiologically ready for them. But with the young deaf child, speech correction and speech development are apt to take place concomitantly. I have seen many cases in which young deaf children are frozen into speech immobility as a result of too early and too rigid correction, and have never been able to attain their speech potentials. The same, I am sure, would happen to hearing children who were exposed to such practices (1962, p. 540).

Pittenger (1956) also has emphasized the need for new methods of teaching the young deaf.

It would also appear desirable that more attention and research be devoted to the possibility of early integration of hard-of-hearing and even deaf children with hearing children. Programs in the other countries mentioned have demonstrated the feasibility of such integration in the preschool years. The experimental programs of the largest day school for the deaf in this country have demonstrated excellent ways and means of providing more normal and language stimulating programs for the very young child (Murphy, 1961; Stone, Fiedler, and Fine, 1961). As McLaughlin has written of the first of these:

We had proven that the deaf child can make a very good progress at the preschool level without being robbed of any of the joys of his childhood (1960, p. 4).

These preschool programs were as concerned with the social and emotional growth of the deaf child as with his educational progress, but the latter did not suffer, either, in the informal nursery school programs. Thus, early education for the deaf as for the hard-of-hearing appears to be finally following the path recommended many years ago by Gesell when he stressed that the fundamental objective should be socialization in the first few years of the deaf child's life. Among other things, he pointed out the danger of too early and too strong an emphasis on the production of speech, and the dangers to personality growth of inappropriate teaching methods. Today many oralists are recognizing these dangers (Cohen, 1964; Galbraith, 1964; Kent, 1962; McLaughlin, 1960). This does not contradict the need for early teaching. Rather it emphasizes that the teaching must be appropriate to the stages of growth in the young child, and it stresses the importance of nonverbal experiences as a basis for language-learning and the role of the parents as the most important teachers. Recent words of Mrs. Tracy (1964) pointed to the goal of all early teaching of the aurally handicapped when she said that deaf children still must be motivated to talk and such motivation

comes about only through normal socialization processes in the early years of life. The importance of early motivation is emphasized in the words of an eminent psychologist (Mowrer, 1960) who came to the consideration of the deaf child from years of study of learning theory and the symbolic processes.

When, however, the gentle, loving sounds which good mothers make to their infants have been missed, due to hearing defects, and when the first human sounds to get through to the child are shouts of displeasure and proscription, it is almost axiomatic that the child thus handicapped will not want to hear, will not want to use even that small portion of his hearing equipment which may still be functional.

Thus, early diagnosis and early therapy which are important to all of the aurally handicapped, can be seen as especially important to the hard-of-hearing child. With such intensive training from infancy, the hard-of-hearing child should, barring other handicapping conditions, be able to progress through school at a speedier rate than his more profoundly deaf peers; and he should have no need to attend a school for the deaf. For these five children, however, there was only the choice between schools for the deaf and schools for the hearing without special remedial services for them; and the choice remains the same today for the great majority of hard-of-hearing children. We need many more and better services within public school systems for such children, and perhaps also residential schools for the hard-of-hearing who live in rural or small town areas which cannot support such special services. Regional planning might provide for the transportation of many hard-of-hearing children to consolidated classes within public school systems, where they might benefit from the more stimulating environment of regular school. As Watson (1960) points out, it is important that schools for the deaf object to taking in children who are hard of hearing, for otherwise the need for separate educational facilities becomes obscured. Whatever the type of special education provided, it needs to be appropriate to the hard of hearing rather than to the profoundly deaf.

Chapter 6

STUDENTS WITH AVERAGE ACADEMIC ACHIEVEMENT

There were eight students in the group of average achievers, six girls and two boys, who ranged from two to four years in educational retardation, and from 94 to 125 in nonverbal intelligence quotients. It was a heterogeneous group, containing, for example, one case of dysacusis, three hard-of-hearing individuals, one child whose under-achievement appeared to be associated with emotional problems of some severity. Three of these students, Cathy, Lucy, and John, have already been discussed in Chapter 5. The remaining five will be discussed in terms of those aspects of their histories which can add to preceding discussions of the varied problems in development and school achievement which confront deaf children.

Brenda

Brenda had a position about half-way between this group and the three best achievers, being retarded only about two years on tests of achievement, with the next closest to her in achievement level retarded 3 years, 5 months. Brenda was diagnosed at Johns Hopkins as dysacusic.

GSR: not conditioned; extinction follows no patterns. There was no startle-effect nor surge at any level. Responses at 20 dB were obtained both with and without alerting with loud stimulus; latency was better (less prolonged) at 20 than at 100 dB. Her voice is "deaf," but quite intelligible; much

more so than a profound hearing loss would make possible. She likes her aid, and with it can identify numbers at about 70 dB. On occasion, she responds to (not hears, but responds to) various acoustic stimuli at minimal intensity levels. One must conclude that this is basically a problem of dysacusis, to which she has adjusted quite well. (See Figure 15.)

This report on Brenda's hearing problem reinforces her teacher's picture of her auditory functioning in her fifth year of school.

I am still quite skeptical about the accuracy of Brenda's audiogram (hearing for speech in better ear 92 dB) so far as its indicating the amount of hearing she actually possesses. I am at times very much convinced that she may be a "top sider" (dysacusic) but to date I have no actual proof other than the times when she has had her head turned entirely away and responded to my calling her with the comment, "I heard you!"... She repeats any exercise given in auditory training with almost 100% accuracy. However, during the past two weeks she has started the practice of giving back an incorrect answer with a mischievous twinkle in her eye. When she has been reprovved for this, she just smiles knowingly. I shall be interested

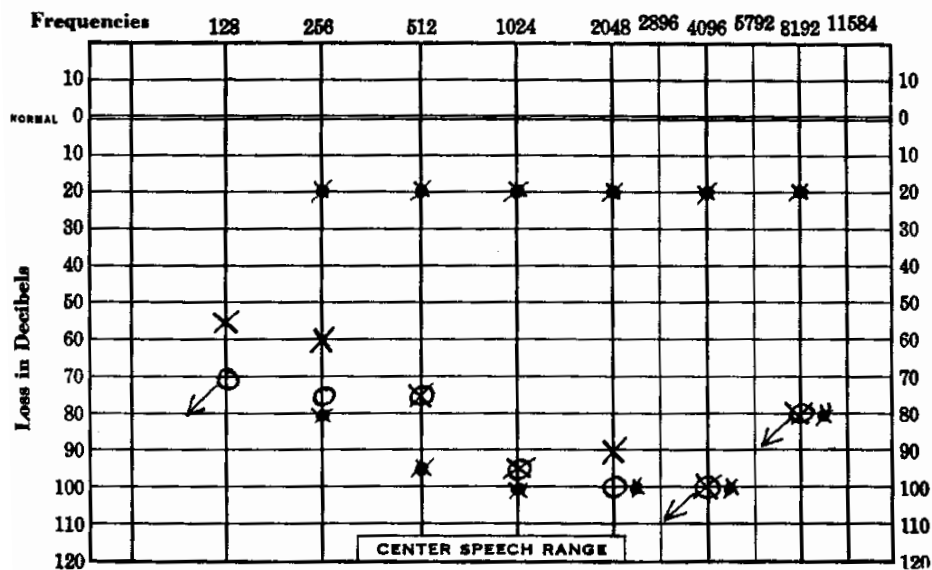


Figure 15. Brenda's audiogram.

in further developments about Brenda's hearing as she goes along through school.

Despite this aberrant problem of hearing, and in sharp comparison with the other three cases of dysacusis (Tim, Matthew, and Wendy) this girl adjusted very well to her problem and was always considered an excellent language learner. The above report went on to say of her speech and language achievements:

Except when she is occupied in reading or writing, every minute in the classroom is a vocalized one for Brenda. Her spoken language is usually very straight and without error and contains constructions and expressions that have never been taught so far as I know. She really enjoys talking and has never met a stranger that I know of. She engages anyone in conversation who gives her a second glance, it would seem. Having a remarkable interest in the world about her, Brenda finds out and remembers many geographical locations that carry associated meanings to her as she adds to her scope. In this particular, I think that she would be an outstanding nine-year-old were she a hearing child.

Brenda is an excellent lip reader both in informal conversation and reproduced language.... Although she is a good reader and can get a lot from the printed page, I do not feel that Brenda is a child who enjoys reading. She seems to feel that reading alone for pleasure deprives her of the socialization that she enjoys more. She definitely would rather gain knowledge from communicating with others than from reading.

It is interesting to speculate about the factors involved in Brenda's excellent language achievement. She never tested above average on intelligence tests, and her play throughout childhood was also marked by immaturity, an immaturity often a matter of concern to her teachers. The summary of her WISC Performance Test (IQ 100) when she was seven was representative of her mental test records.

On this examination, as on all previous ones, Brenda appeared as a child of average intelligence. She also appeared as a very dependent and unself-critical one, i.e., she watched the E for approval and disapproval and could not, even when urged, look at her own work and decide whether it was satisfactory or not.... She tended to persist in her errors and to be rigid in her attempts to do the Block Designs and puzzles.... She had difficulties with any test requiring reasoning or problem-solving.... Yet even when she was having such

obvious difficulties Brenda did not appear to be bothered as long as the E smiled at her. Any sign of disapproval or dissatisfaction from the E disturbed her abnormally. It may well be that the whole examination was disturbing to her, although she seemed happy when she left and later in the day expressed pleasure about it.

At this same stage of her development Brenda's dependence and anxiety showed up in her play sessions and was also commented on by her teachers. When she was first seen alone in a play session at the age of five, she had played actively and put on a colorful show with much animation and joy, as the summary of the session related.

Brenda is a delightful child, much freer and gayer than most of her group in this situation. She is a big, rather clumsy girl and gets into trouble because of this. She needs sympathetic handling and guidance to keep within the school limits. Help to keep her spontaneity!

The latter comments were made because Brenda was having some problems in adjusting to residential school life and looked lost and bewildered when observed outside the classroom. Her first teacher described her as very emotionally disturbed in her first days, giving a lot of trouble and running off continually "after her parents." On school entrance: "She came spouting sentences" and her lipreading and language were considered superior from the beginning. She had trouble adjusting to other children, however, although she was very desirous of having them like her. As reported by her teacher four years later, when she was nine:

Brenda is a very insecure child. She wants to be the center of the stage at all times and practically demands it This insatiable desire for recognition carries over in her relationship with her peers to the point of annoyance. Often she punches the child next to her in a group situation off and on for the entire class period trying to get him or her to pay attention to what she wants to say... it seems impossible to explain to her (why this makes her unpopular) even as she matures and gains more understanding of language.

In later play sessions, when she was seven to nine, Brenda appeared unable to make much use of either the MLT or World Test toys. The observer said:

Why has she lost all spontaneity? Is now submissive and over-anxious to please. Her age? Will grow through and out of this phase? In relation to this, it is interesting to note her very dependent and anxious-to-please behavior in mental testing situations.

At this time, in a conference with her mother, a similar picture of her activities at home emerged. Her mother agreed that Brenda was not much interested in playing with toys but always was happiest when busy with pencil and paper, books, or someone to talk to. She loved particularly to have her mother say to her, "Let's just go outdoors and sit down and talk."

In this remark of her mother's, it seemed, might lie the secret of what seemed at that time the paradox of her excellent flow of language, her seemingly only average intellectual endowment, and her profound deafness. Brenda's deafness was suspected when she was 8 months and diagnosed when she was 20 months old. Her birth and early months of life had apparently been quite normal, with no serious illnesses or traumas, and she was described by her mother as an unusually happy baby.

Seen by a psychologist at an eminent children's hospital when she was 25 months,

Brenda seemed a responsive and well-organized baby. She handled play material well, and was enterprising in activities. The parents report usual imitative behavior and interests of a two-year-old. Seems a rather tense baby who hates to be left alone, as most young deaf children do.

The shock of the discovery of her deafness was great for her family circle and her mother believed that their ensuing anxieties affected Brenda, making her a tense, nervous child. However, while this may well have been true, the parents also concentrated in positive fashion on Brenda's problem and provided unusually rich and constant stimulation to language development. To quote her mother:

From the minute I discovered Brenda's deafness, I resolved to give her all the experiences a normal child would have. I took her shopping, visiting, etc. I certainly didn't keep her

shut up at home. I was busy with her all day long. Whether this was good or bad, I don't know, but I was certainly a very worried mother and wholly concerned about her future and welfare.

Whatever negative effect the almost inevitable "worry" may have had on Brenda, the constant attention and talking to her undoubtedly paid off in a positive way. It is easy, though, to understand Brenda's needs for attention when she left this warm, loving family, where well-educated, intelligent parents were concentrating their attention on her, to go into a residential school where the attention she received must have seemed meagre indeed.

This early separation from home was undoubtedly made much more difficult for Brenda by the birth of another sibling shortly after she left home for the school. Her mother reported that soon after this birth Brenda began biting her nails. This nail-biting was still of concern to her teachers 10 years later. With the sort of home Brenda had, she might well have been better off had she attended a school for the deaf on a day basis.

Brenda continued her school career with much the same sort of reports following her: excellent school achievement despite difficulties in getting along with other children because of her self-centeredness and her desire that she always be the one to give the right answer first. With the help of her teachers, however, she began to overcome some of these tendencies, so that when she was 13 her supervising teacher could report:

(In her early years) she talked so much, she found it difficult to be quiet and let others have a chance to express themselves.... Her school work continued to improve and she really began to make some effort to change her behavior. She seemed thirsty for knowledge and began to do a substantial amount of voluntary reading.... She is interested in all her school subjects. Her school work is still affected by her social behavior, but her wish to be right at all times and to be at the top of the class shows some signs of control.... I recommended to her parents more contacts for Brenda with hearing children, especially some summer camp experience.

Her parents had always been concerned about providing companions for Brenda, since their neighborhood had few children her age.

They were still concerned about this when Brenda was 16 and 17, but at that time Brenda was enjoying summer volunteer work where she was successful and got along well in a hearing environment. She did good work in her last years of school and planned to enter a regular high school. The school recommended that she go on to college.

The follow-up examinations for Brenda confirmed the picture of her thus far painted. At 13, the final WISC report read:

Brenda seemed her usual talkative and rather tense self with free-flowing and highly intelligible speech. It is interesting to note that even with this highly verbal girl, the Vocabulary score is still low and quite out of line with her scores on other verbal tests. She tested as slightly above average on Information and was quick and accurate on Arithmetic and above average in ability to generalize. She did poorly on the Comprehension questions, giving immature responses and revealing a lack of understanding of some of the simpler everyday situations involved. With Brenda it was obviously lack of understanding of the situations, rather than any language difficulty.

Brenda's method of work with the performance tasks was definitely immature, rather impulsive and also rigid.

Brenda's figure drawings at this time and later were characteristic -- rather childish and poorly proportioned and executed in a hasty, impulsive fashion. To their analyst they revealed considerable tension and anxiety. When she was 15 she appeared to the Rorschach analyst as a little more advanced into adolescence than the other girls, with her Rorschach record appearing as neither organic nor disturbed, but as somewhat low in integrated responses, with primitive and narcissistic responses evident. There were responses which suggested considerable anger -- anger that she was a girl rather than a boy. It is interesting to note here that Brenda's mother had reported that, while devoted to her brother, she was intensely jealous of him and his social activities as a child with hearing.

Brenda, then, was dysacusic with an auditory experience which, while atypical, was somehow supportive to language learning. Her high motivation and drive to succeed academically can be seen as based, at least in part, on her early close relationship with her

mother, with its reinforcement of learning through verbal channels. She is an excellent example of the benefits of parent-oriented early teaching, which most educators of the deaf consider the most helpful and productive for young deaf children. Retrospectively, it appears that she might have found it easier to deal with her anxieties and to adjust to a school that would not have separated her from her home, i.e., a day school for the deaf. Such a choice had been possible for Brenda, where it usually is not for most deaf children, because of the geographical location of her home. As it was, Brenda did well, despite her atypical deafness and her anxieties, and after graduation entered the high school in her home town.

Judy

Judy was retarded only 4 years, 3 months, on final achievement tests, but she had moved along more slowly than the main group and graduated one year later than they did, along with below-average learners Carl, Doug, Leona, and Mary. Like Cathy she appeared to be a girl whose academic progress was blocked to some degree by emotional problems. Considerably more deaf than Cathy and probably not as intellectually superior, she was a girl of at least bright-average ability and with more residual hearing than some of the top achievers, as her Johns Hopkins report showed.

The GSR was an excellent test, with rapid conditioning. Unaided, she was aware of voice and whistle at 76 dB. Her aid was quite noisy. She has no auditory patterns for speech, even with her hearing aid, although without doubt the aid helps her in interpreting in conversation. A better aid might well help much more; she needs high output power. (See Figure 16.)

Within six months of this examination Judy had obtained binaural aids and according to her mother, reported that her own voice sounded "different" to her. She could now hear the telephone ring and, in general, seemed to get more help from her aids.

We can see the sources of some of Judy's learning problems if

we go back to her school entrance and trace the course of her development. This child's emotional problems were recognized immediately, and she might well have been helped by supportive therapy at an early age, had such help been available for young deaf children. Coming from a comfortable, well-educated home to school at the age of 4 years, 4 months, she was described by her teacher as "a frightened, maladjusted mite." Both mother and child appeared highly anxious, with marked problems related to separation. Five years later Judy was described by her teachers as still a very tense child who had trouble in any new situation, and one who became almost hysterical when under any stress in classroom work or play. She had difficulty doing even acceptable work when in any way distracted, but was able under relaxed conditions to work slowly and well.

Observations of Judy in test and play situations by the writer produced a picture of a child who was quiet and self-engrossed, with a rather phlegmatic, absent-minded quality about her. Play session

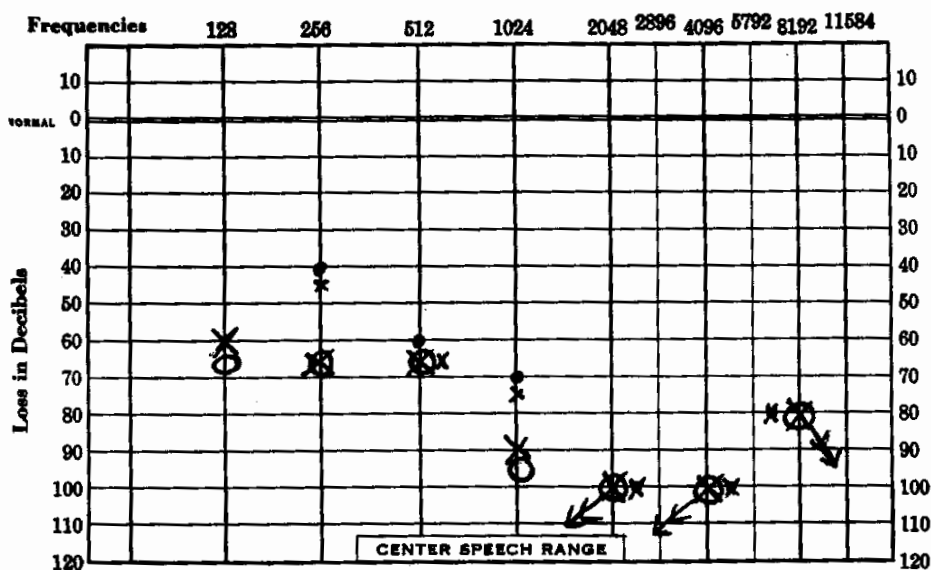


Figure 16. Judy's audiogram.

reports in her early years described her as markedly inexpressive with such questions raised by the observer as:

Is this child held down at home? Does she ever break loose and make noise or show affection? She seems to need much encouragement to behave more freely. She is over-conscious of adult approval.

From her mother's reports of her behavior at home, Judy was a rather tomboyish girl who played actively and freely, so that one may guess that her very inhibited and apprehensive school behavior may have been, at least in part, her reaction to separation from her home and to anxiety aroused by the demands of school living and learning. Later play sessions revealed the same sort of inhibited behavior. At 6 years, 7 months, her play session with MLT materials showed little use of the toys other than a set of wooden cubes for 25 of the 30 minutes, with organization of the scant play with the toys schematic and rigid. She lined up the cubes over and over again, going back to the other toys repeatedly but only to rummage among them, seemingly unable to commit herself to any use of them. Her behavior was extremely inexpressive and lacking in affect, although by this time she was well-acquainted with the observer. The summary of these later play sessions describes her play as similar in quality to either a mentally retarded or an emotionally disturbed child.

However, it was quite clear that Judy was not a mentally retarded child, for she had tested at five on the Leiter Scale with an IQ of 100. Later mental tests confirmed this, with a WISC Performance IQ of 104 at the age of 7 years, 6 months, of 101 at 14 years, 5 months. In addition, Judy's man drawings had always scored on the Goodenough Scale as well up in the superior range, so that the writer had thought of her as a girl of probably superior capacity, who was having a hard time to learn speech, but who might come into her own when reading and writing became more important in school achievement.

Meanwhile, in the first five years of her school life, she appeared to have emotional problems, which were characterized by intense anxiety. Observations of Judy in the classroom reinforced the picture of a quiet, very well-behaved child who became easily upset.

At one time, when the writer asked her (along with the rest of her classmates) to draw pictures of a bird and a few other things, she burst into tears and had to be excused from class. This was the more remarkable in that she was more gifted in drawing ability than most of the children, producing pictures that were always exceptionally well-organized, rich in details and aesthetic appeal. Test and observation sessions were summarized when she was seven as follows:

Judy appears in all of these situations as a tense and anxious child. Accounts of her play behavior outside school give a contrasting picture of an active, noisy child. Is it perhaps the learning situation that causes the anxiety? Is it because of too early, too formal demands? Or because of her family's intense anxiety about her achievement? She appears as a girl of at least good normal ability who would benefit from psychotherapy.

Here was a situation where early attention to the mother-child separation problem, and therapy to ease the anxiety, might have prevented many of Judy's school difficulties and made it easier for her to achieve at a rate compatible with her ability. Such help was not sought, and Judy struggled through her middle years in school, not achieving up to capacity, having trouble with lipreading, and now a poor reader, also. She was plagued throughout her school years by frequent bouts of illness for which no clear somatic causes could be discovered. At one time she required hospitalization for symptoms simulating anorexia nervosa for which, again, careful hospital tests revealed no organic basis. Throughout these latter years of school she continued to be described by her teachers as over-anxious, trying hard and memorizing facts well, but finding it hard to get thought from language, to relate facts to each other.

An early Rorschach examination was summarized as showing good reality testing and no serious disturbance, but it also showed that Judy had difficulty in interpersonal relationships, and found it hard to reach out and to be close to others. The expert who studied the Rorschach and TAT record asked whether it might possibly reflect effects of early separation from home. Considerable anxiety was noted, as well as dislike of school, and, in general, she seemed unable to accept her own inner feelings, dealing with them by denial

and suppression. Supportive therapy was offered at that time, but for some reason it was not accepted.

When Judy was 15 a second Rorschach again showed anxiety present but no marked depression. For the WISC examination just a few months before this her test behavior was summarized:

Judy seemed tense and anxious, needing approval of everything she did. At no point did she relax and enjoy herself. Only on Coding did she seem at ease, just her forte, in which her compulsivity and neatness helped. Unlike most of her peers, on Mazes, she was afraid to turn a corner without a nod of approval from the E.

Despite her problems, however, Judy did learn, and she performed at the average level for the group on the Stanford Achievement Tests. After graduation she went on to the high school in her home town. Hopefully, her will to achieve, supported by devoted parents, and helped considerably by her improved hearing aid, will enable her to get along in the hearing school environment.

Vicky

Five children were retarded only about three years on the Stanford Achievement Tests, three of whom were the hard-of-hearing students already discussed: Cathy, Lucy, and John. The fourth child was Vicky who had always kept along with the normally progressing group and been considered a good, average learner, although somewhat unmotivated and "lazy." Vicky was a deaf girl who made good use of her residual hearing as indicated in her Johns Hopkins examination.

This is a severe hypoacusis; residual hearing is both useful and used. Her voice is well monitored, with good quality, and good control of stress-patterns and rhythm. Without her aid, she is aware of a variety of acoustic stimuli at 84 dB. With her aid, she has an SRT for double-digits of 54 dB; she could not "listen" accurately to spondaic words at this level. This is a deaf child with good employment of residual hearing. (See Figure 17.)

Vicky was one of the more fortunate in the group in having a manageable hearing loss, a good family background, and a good deal of early preschool teaching. Her birth and infancy were normal, and her hearing loss, considered congenital, was discovered before she was two and a hearing aid prescribed. She, like Brenda, appears to have had the best sort of early training. Her mother reported:

Because we didn't realize she was deaf until she was two, we talked constantly to her from the time she was born, expected everything of her that you would expect from a normal child, especially discipline, and I believe this has helped her to be such a good lipreader. We did not change our attitude after we found out she could not hear and she has always acted like a normal child.

In addition to all her mother's help, Vicky was also tutored one hour a week, for about one and a half years. Her clinician found her easy to work with and very attentive. The first time he saw her, when she was four, she could say "Mama," "moo," "baby,"

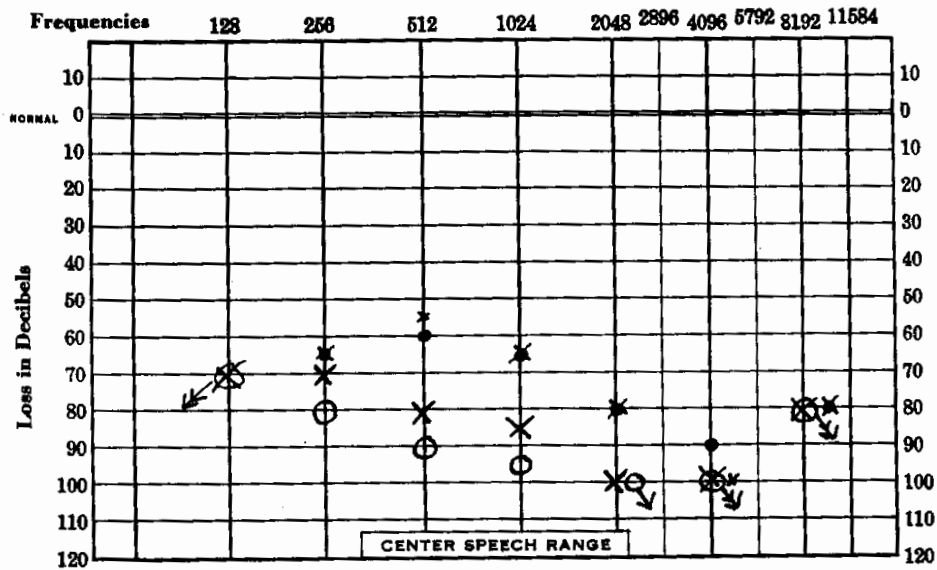


Figure 17. Vicky's audiogram.

"doll," and "gar" (for car). Her mother carried out the clinician's instructions for work in the home and Vicky responded well. She soon learned to approximate many words and began to use words voluntarily. Wearing her aid, she would turn when spoken to and not looking, indicating that she was using what residual hearing she had.

The summary report of her preschool work read:

Vicky is now able to use words she has learned without prompting. She lipreads remarkably well and imitates speech sounds much more easily than she did in the beginning. Her acuity is much better. She responds to meaningful sounds which she can hear, which was not the case a few months ago.

Yet, with this auspicious beginning, and no handicapping condition other than her hearing loss, from the beginning Vicky was seen by all her teachers as an under-achiever. As summarized by her teacher at the end of her fifth year in school:

Possessing plenty of ability and a most lovable personality most of the time, Vicky is the typical phlegmatic type of child. Learning is such an effort and it's so much more fun just to sit and not think! This is Vicky's attitude toward all class room activity. Possessing a wonderful sense of humor and a good understanding of language expression, Vicky is an excellent informal lipreader. She usually responds with a very appropriate comment when you talk to her outside of class and it is seldom necessary to repeat for her.... Vicky uses good language in most of her oral expression.... However, when there is any written reproduction or response required, Vicky just can't be held to any kind of satisfactory response without very stern prodding from the teacher. Again, it's just too much like work!

Similarly, four years later, her supervising teacher wrote of her:

Vicky started her career with us as she has finished it. She was the joy of her peers, who love her dearly, and the despair of her teachers, who also love her dearly. Every report from every teacher included the word lazy. Her posture and her general attitude have mirrored this. On two occasions because she appeared so tired, I requested a physical checkup by her doctor at home to be sure she was in good shape physically. Nothing was wrong.

The term lazy was not first applied to Vicky in early adolescence. It pursued her throughout her early years of school along

with the term slow, meaning slow of pace rather than mentally slow. Yet we know that no young child is truly "lazy," but rather that this is a word used by teachers very often when they really mean "unmotivated." As the above report concluded:

Vicky has not yet reached the point that most of her classmates have -- that it is important to learn and that it can be fun. Her speech and language can be good when she tries but mostly she is content to go sloppily along. She has a pleasant disposition and we all are fond of her but her daily school work is very disappointing.

She had apparently never been motivated since she entered school; and whatever our beliefs about adolescents willing themselves to learn, we know that this cannot be expected of young learners. We also know that interest and excitement, and the harnessing of the young child's natural curiosity and desire to know, are what sustains any motivation which survives into the adolescent years. This apparently was never kindled in Vicky. Why? It is as impossible to answer this question about Vicky as about any other child, hearing or deaf, although some perceptive teachers have provided us with clues (Holt, 1964). We can, perhaps, see a few thought-provoking clues in some of Vicky's early experiences: the experience, particularly, of abrupt and prolonged separation from parents (an experience, we should remember, shared by all 20 children).

Vicky entered school when she was almost 5, having attended a regular nursery school for a year. She got along there well, and seemed to her teacher to be in all respects a very normal, perhaps superior child. The teacher remarked, "her home training must have been excellent as she does not seem to be pampered because of her disability and she has a very sunny disposition."

Her mother described her as "independent and self-sufficient, easy-going, rather slow and pokey but nothing seems to bother her too much." Yet, on school entrance she was considered to be immature, babyish, and strongly dependent, playing only with adults and wanting everything done for her. This may very well have been reaction to the three-week separation from her parents, required by the school, although her mother felt she made a good adjustment to being left. It is worth noting that in the year preceding her

school entrance she had had a very upsetting experience. She had had a tonsillectomy with no preparation for the experience, and a family physician had advised the parents not to stay with her until she was anesthetized, and not to be present when she awoke. When they called for her the next day she sobbed and trembled uncontrollably for a long time, and she retained her fear of hospitals well into her school years.

How did she really respond to being deserted again in a strange place and not visited this time for over three weeks? Her emotional turmoil over a return to school three years later may tell us. The spring of her fourth year in school, when she was eight years old, we find a record of a period of rebellion. During her spring vacation she seemed depressed and at night often cried and said she did not like school. "I like home," she told her mother and begged to stay there. On the way back to school, as they reached a neighboring town, she became hysterical and said she hated the school, but her parents handled this outburst calmly and took her on to school.

At this time they were advised by Vicky's supervising teacher that she "lies down on what is hard and we must not let her," and that she disliked work in the classroom and needed someone to sit beside her and reassure her. Deaf children, they were advised, have to learn to work harder than their hearing peers in order to achieve in comparable fashion. Vicky, however, never was persuaded to work hard and, although she kept along with her class and managed average achievement, never accomplished what she should have, according to her teachers' assessment of her abilities.

The lack of motivation which Vicky illustrates is, of course, the commonest of complaints about school children, hearing or deaf, but it should concern educators of the deaf even more acutely. Deaf children, most of whom are in residential schools, are peculiarly vulnerable to programs which fail to take advantage of the young child's natural curiosity and desire to learn. They depend on their teachers for most of what they can learn, at least until they master the skills of reading -- and few do that to a really adequate degree. Hearing children living in their own homes and in the community have many opportunities for stimulation and learning outside the classroom; few deaf children do.

Teachers of the deaf, possibly even more than the teachers of the hearing, need to be continually aware of the most crucial fact about learning: children learn what they desire to know. Any examination of methods and curriculum for the deaf must raise the question "how desirable is most of the academic food being offered?" As a recent book (Holt, 1964) which might be required reading for all teachers states it:

School should be a place where children learn what they most want to know, instead of what we think they ought to know.

The author goes on to say:

Thus we find ourselves trying to poke certain facts, recipes, and ideas down the gullets of every child in school, whether the morsel interests him or not, even if it frightens him or sickens him, and even if there are other things that he is much more interested in learning.... Instead, we should try to turn out people who love learning so much and learn so well that they will be able to learn whatever needs to be learned (pp. 74-75).

Educators of the deaf are realizing the need for programs more solidly based on understanding the developmental stages and needs of the child. It is hoped that such programs, centered in knowledge of child development, learning theory, and dynamic psychology, will open up new opportunities for the deaf child (Groht, 1958; Levine, 1960, 1962; Pittenger, 1956; Stone et al., 1961).

Vicky, then, did well but might have done much better. She had always shown at least average ability when tested, and her Rorschach indicated fairly good integration at age 15. Her WISC scores at that age were Performance IQ 113, Verbal IQ 81, and she was educationally retarded 3 years, 5 months, on the Stanford Achievement Tests. How far her aversion to school and lack of motivation was related to the emotional trauma of such early separation from her family remains a question. Despite her lack of motivation, Vicky progressed through the school at the expected rate, and on graduation it was recommended that she attend the high school in her home town.

Louis

Louis was a bright boy (WISC Performance IQ of 127 at 14) who, while he progressed through the school at the expected speed, was never considered a really good learner. The writer's summary of the first five years of his schooling agreed with teachers' reports of his later accomplishments:

Louis appears to be a boy who is an exceptionally mature deaf child who appears more "normal" in his behavior and in his understanding of the world as expressed in his play sessions and art work, than many. He also had had, apparently, an unusually rich and stimulating preschool life before school entrance, not only in the matter of speech training but in nursery school experiences and opportunities to play normally at home. He has had a hearing aid since before he was three. He appears to be a boy of at least high average intelligence with no history of serious illness or traumatic experiences of any kind. Despite all these initial advantages he has not been a good school learner. Why? There appear to be several factors which may be related to his rather slow and erratic progress.

1. He has had trouble with lipreading from the beginning. His first teacher sees him as a boy who can learn only through use of an analytic method -- he can learn little in a natural, synthetic way. This could well retard him in all school learning.
2. There are several suggestions that he has been overly indulged at home, also that his parents are unrealistic about the handicap of deafness. They seem to refuse to face it.... It may be that the home over-indulgence has developed in Louis a reluctance to work hard at or for anything, as his teacher suggests. It may be, however, that it has been and still is very difficult for Louis to adjust happily to being so far from home, particularly such a satisfying home. This might account for his periods of "daydreaming."
3. Louis appears to be less spontaneous, less full of life and ideas than on school entrance. This suggestion came independently from both his play sessions and from analysis of his art products. Has school life been somewhat depressing and stultifying for Louis? He gets away from dormitory life very seldom, only for holidays and vacations. He is

a boy who from the beginning, much like Rita, appeared as one who would profit from a rich learning environment. Has the school program somehow, for him, failed to provide it and hence stimulate him to better learning?

Louis continued to have much trouble with lipreading throughout his school years, and this handicapped him in classroom performance. He also found it hard to express what he knew orally, partly because of difficulty in acquiring an adequate vocabulary. However, Louis was considered to have a good mind, and he was described by his teachers in his later school years as doing his homework well and getting from study what he could not get in the classroom. He was functioning at about the seventh grade level when he was 14, with more retardation on the reading subtests of achievement tests. With regard to his difficulty with lipreading, it is interesting to note that he was one of the few students to have difficulty with the WISC subtests involving visual perception and integration, Block Design, and Object Assembly. His final subtest scores were above average but he tackled such tasks in a highly impulsive fashion, making many initial errors.

The Johns Hopkins report for Louis suggested some basis for his language-learning problems.

This is an extremely distorted hypoacusis. GSR test was good in all regards; all these levels were actually identified subjectively, and he knows the acoustic distinctions of "high" and "low," "loud" and "soft." Actually, he gets relatively little intelligibility from his hearing aid, albeit there is ample auditory support. Without his aid, he is aware of speech at 56 dB; with it, at 34 dB. He has no useful auditory patterns without vision. In general, he is a deaf boy with perhaps more auditory capacity than he has been able to put to full use. His voice is quite "deaf" but shows some useful modulation that helps a listener. (See Figure 18.)

From his parents' reports, Louis' life at home had been and continued to be a good one, with many hearing friends. He had the ability to get along well in an active life of sports and other social contacts. They planned for his entrance into a private secondary school of high standards. When the writer last saw Louis, he was a handsome, sturdy boy -- friendly and socially mature in the

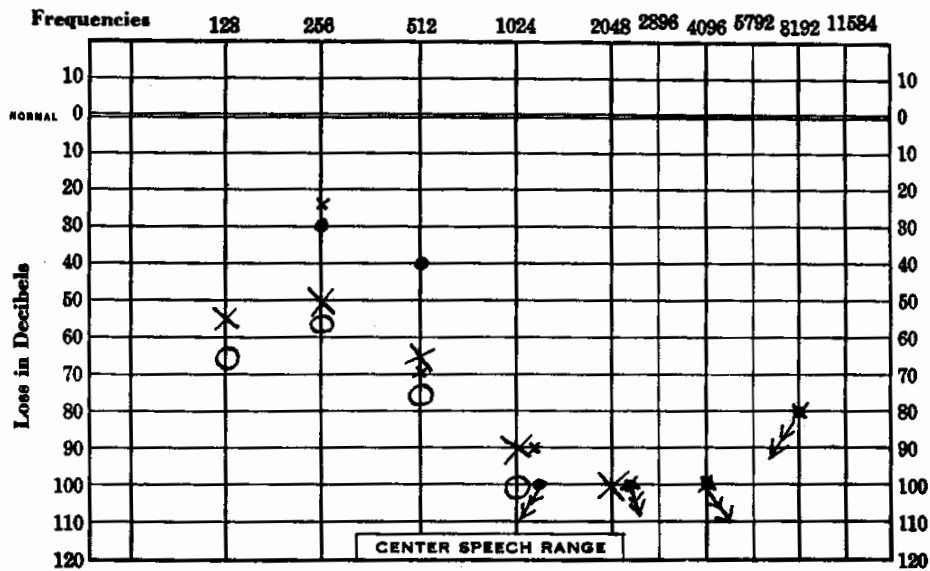


Figure 18. Louis' audiogram.

testing situation. He appeared to have a very high aspiration level, trying hard and getting tense and excited when he knew he was being timed on any subject. He was very pleasant with an unusually good sense of humor -- he could laugh heartily at himself when he ran into difficulties or made silly errors. These positive qualities of personality and his superior intelligence should help him in his adjustment to a hearing environment, despite his real problems with lipreading and language learning.

Joyce

Finally, Joyce, the most retarded of this group of average achievers, progressed through the school at the expected rate and graduated with the most advanced class. In addition to her deafness she had a mild problem of motor incoordination. In her early

years of school she had been rated as an excellent learner but later as only average in her school achievement. She tested consistently as having average intellectual ability, with IQs always close to 100 on nonverbal tests. Her deafness having been diagnosed at one year, she had had weekly speech and auditory training from that time on, entering school at the age of 4 years, 11 months, with some ability to lipread but little speech. She had had a hearing aid from an early age and was described as babbling constantly when she wore it, but she had not worn it consistently. Reportedly, its use was disturbing to her because of loud environmental noises or frightening ones such as a dog barking. The Johns Hopkins report showed that Joyce dealt well with her hearing handicap.

This girl has a very distorting hypoacusis, with considerable residual hearing. She is aware of speech at 56 dB without her aid. She has an SRT of 36 dB for double-digits with her aid; she is unable to listen down to minimal levels for intelligibility measurements with spondaic words. With a combination of looking and listening, she does very well. (See Figure 19.)

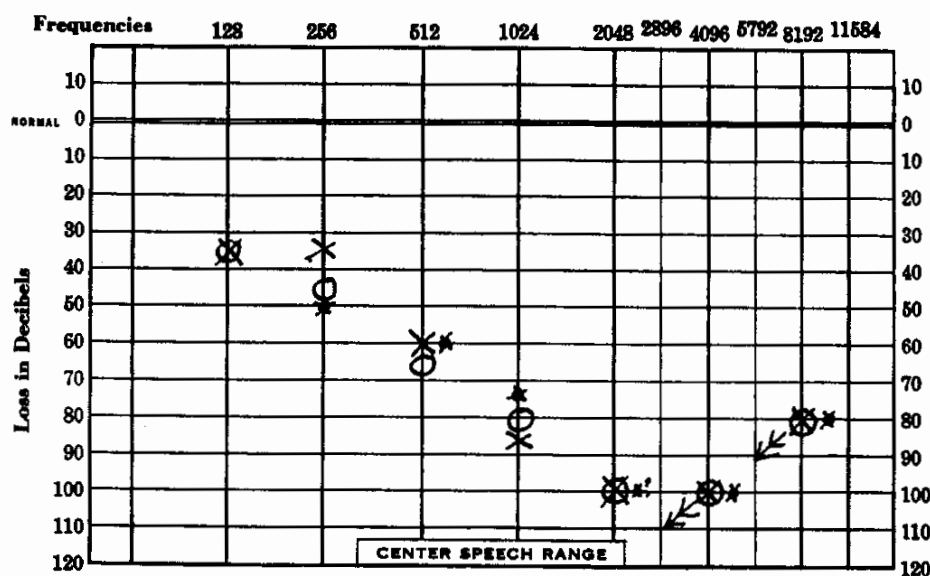


Figure 19. Joyce's audiogram.

In all her play sessions Joyce had appeared a rather quiet and anxious child, but the tiny play materials may not have been entirely appropriate for her because of her motor coordination problems. She went through school with no marked learning or behavior problems noted other than reluctance to work hard unless forced to do so. Her projective tests at 15 suggested immaturity and a rather constricted inner life with little creativity or imagination. However, when the examiner last saw her she appeared to be an attractive and friendly girl who had a lot of difficulty expressing her ideas but who seemed to have done well as a multiply handicapped individual. She planned to attend the high school in her home town. Her parents, while expressing concern about her future there, felt that in her last few years she had begun to realize she must really study and work hard at learning, and had more confidence in herself. The previous summer she had attended a normal junior high school where she had hearing friends for the first time in her life. It was a happy experience for her when she found she was able to talk with them.

Chapter 7

SEX DIFFERENCES IN ACHIEVEMENT AND SUMMARY OF JOHNS HOPKINS DATA

Sex Differences in Achievement

It seems clear, if this group of 20 students is at all representative of the larger population of the deaf, that the problem of educational retardation is more acute for boys than for girls. Table 2 summarizes the sex differences in achievement for this group.

Table 2. Comparison of girls and boys for amount of educational retardation.

<u>Retardation</u>	<u>Girls</u>		<u>Boys</u>	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Less than four years	6	0.55	3	0.33
Four years	2	0.18	0	
Five years or more	3	0.27	6	0.67

Thus, we see the marked difference in achievement with 73% of the girls average or better achievers, but only 33% of the boys. Other investigators have found similar differences between the sexes in academic achievement, Myklebust (1960) in this country and Wollman (1964) in England.

It is impossible to do more than speculate about these differences. There are always more boys than girls in any group, hearing or deaf, who have problems of school adjustment, whether because of poor reading skills or of poor general behavior. With this group, at least, it did not appear to be a difference in general intellectual capacity. Although the mean IQ for the girls is somewhat higher than that of the boys because of two girls of high IQ, the median IQs are comparable, 113 for girls and 111 for boys. Three boys had IQs of 120 or higher, as did four girls. If we look also at the WISC Performance IQ figures in Table 3 for the best to poorest learners, we see that aside from the top three achievers the group differences in these estimates of general intelligence are not notable.

Table 3. WISC PIQ for best, average, and poorest learners.

<u>Retardation</u>	<u>Performance IQ</u>			
	<u>N</u>	<u>M</u>	<u>Mdn</u>	<u>Range</u>
Less than one year	3	132	132	121-142
Two to four years	8	112	110	94-135
Five years or more	9	109	111	90-124

Thus, the very marked differences in achievement between boys and girls, or between average and poor learners, are not associated with marked differences in general intellectual ability as estimated by the WISC Performance Scale. It is, of course, a different picture when we compare the Verbal IQ scores of these groups, but we must regard the WISC Verbal Scale as measuring essentially the same things with deaf students as do achievement tests. Thus, the 11 girls have a mean VIQ of 83, while the 9 boys have a mean VIQ of only 66. Similar differences in mean Verbal IQ are noted with the best, average, and poorest learners: 92, 82, and 63, respectively.

It is an interesting question, whether these learning

difficulties for boys in a residential school for the deaf are intensified by some of the reasons for lack of motivation suggested in previous chapters. It is the writer's hypothesis that explanations for differences in achievement between deaf boys and girls, as with hearing ones, should be sought in the realms of motivation, in curricula geared to feminine more than masculine interests, and in the lack of masculine figures on the educational scene. A good subject for research would be a comparative study of the achievement and school adjustment of deaf boys taught by and living with men and those taught largely by women. Wollman (1964), in studies of English deaf students, also suggests the need to examine curriculum and motivational drives to understand sex differences in achievement. The unique problems that speech learning may present to deaf boys should also be studied.

Summary of Johns Hopkins Data

The summarizing statements from the Johns Hopkins examinations emphasized also the need for research concerning the language-learning problems of the deaf.

Nineteen of the 20 students were taken to the Hearing and Speech Center, Johns Hopkins Hospital, for diagnostic audiological examinations. The individual report is included in each case history, but it is of interest to summarize briefly the audiological findings and to sort out the students by audiological criteria. Generous quotations are taken from the summary statement concerning this group made by William G. Hardy in a paper read at the meeting of the Alexander Graham Bell Association in 1962.

Four students were identified as having "extremely aberrant problems of hearing involvement, far different from any classical picture of 'profound hearing loss', yet all are very 'deaf'." These four were Brenda, Wendy, Tim, and Matthew, and there is some inconclusive evidence that Dan also might have been included in this group had he been examined. Thus, one-fifth, or possibly one-fourth, of the group had learning problems associated with atypical deafness.

Tim and Matthew (and Dan), as we have seen, were the most educationally retarded of the 20 and spent most of their school lives in what amounted to a special class situation. Both appeared dysacusic in the Hopkins examination but were otherwise very different. Tim was a bright, gifted individual, as evidenced by his performance on nonverbal tests of intelligence and the Rorschach Test, as well as in his painting and drawing behavior from his earliest school days. Matthew, on the other hand, had always appeared as a slow, plodding sort of student. He had suffered from his earliest childhood from a very impoverished environment, impoverished in both human relationships and intellectual stimulation. One wonders just what his "dysacusis" involved -- how far it may have been psychogenic. With Tim there were also complicating psychogenic factors, but his learning problems seemed clearly part of a general neurological dysfunctioning.

In marked contrast to these two boys was Brenda, who had always been considered a superior student, one with exceptionally free-flowing speech from her preschool years on. In her case one must hypothesize that what she heard was somehow supportive to speech and language learning and, along with the great motivation for speech from family stimulation, accounted in part for her status as fourth best achiever in the group. Despite her school achievement, Brenda never tested as above average on psychological tests, and in her play and general behavior she never showed any signs of highly superior intellectual endowment.

The fourth dysacusic student, Wendy, always seemed very healthy and normal, with an excellent home and early environmental experiences. But her records suggested quite specific problems in language learning and retention. She always tested as at least bright-average on nonverbal intelligence tests, and she produced a good Rorschach record. Her aberrant hearing problem had, apparently, been handicapping.

"All but one were quite fully verbal in normal conversational situations; the one clearly has concomitant problems of central-nervous-system dysfunctions." This one was, of course, Tim; and Dan might well have been described in similar terms had he been examined. "While none was found to be clearly dysphasic, 11 appeared

to offer fairly clear evidence of problems of language-learning and retention that could not be accounted for by kind nor degree of hearing impairment." Two of these were not in our group of 20, but were children included in the trip to Hopkins. The other nine are the nine poorest achievers after Dan, named in order of most to least educational retardation: Tim, Matthew, Carl, Leona, Doug, Tony, Mary, Judy, and Wendy. All of these students at the ages of 15 or 16 were 6 or 7 years retarded on one or both of the paragraph and word meaning subtests of the Stanford Achievement Test. Three had weighted scores of 0 for the WISC Vocabulary, the other seven scores ranged from 2 to 4. All but one scored below the group mean of 8.7 years on the Peabody Picture Vocabulary Test. A glance at their ranked scores (from 2 to 19) for degree of hearing loss will show how little the language learning was related to the hearing loss. (See Table 4.) Similarly, although there was a group difference of 14 IQ points between these poor learners and the good learners, there was quite a range in intelligence as estimated by nonverbal tests in this group of poor learners, with two students who ranked among the half dozen highest as well as those who ranked the lowest on such examinations. Included in this group of nine were four who showed on the Hopkins examinations "extreme problems in processing, retention, memory and recall of verbal-symbolic information transmitted through any single mode or any composite of modes": Tim, Matthew, Leona, and Carl.

Dr. Hardy (1962) concludes by saying he believes the group to be representative of a fairly typical group of "deaf" young people, and that:

We all see similar kinds of problems in learning, particularly in language facility, among young people who are not deaf, but who have other kinds of difficulties.... (There) seems to be a tremendous gap in our information truly relative to the principles and practices of teaching "the deaf," whose variables in language-development and in general learning far exceed their similarities in lack of capacity to deal with sound (pp. 361-362).

Nine of the 20 students were grossly retarded in language development. They presented evidence of being handicapped by specific language-learning problems which accompanied their handicap

Table 4. Ranks on various tests.

Name	1962 Stanford Achiev.			1962 WISC		1962 Peabody	Leiter	Hrng. Loss	Speech Percept. #	
	Med- ian	Par. Mng.	Word Mng.	PIQ	UIQ	Vocab.	IQ		L&L	LR
Joan	1.0	2.0	3.0	3.0	2.5	2.0	1.0	4.0	4.0	6.0
Rita	2.0	3.0	2.0	1.0	4.0	5.0	2.0	16.5	9.0	7.5
Ted	3.0	1.0	4.5	7.0	1.0	1.0	5.0	14.5	11.5	12.0
Brenda	4.0	4.0	1.0	8.0	5.0	3.0	8.5	11.0*	7.5	3.5
Lucy	5.0	6.0	4.5	12.0	2.5	4.0	10.0	3.0	2.0	3.5
Vicky	6.5	10.5	6.0	9.5	7.0	7.5	13.5	12.5	7.5	5.0
John	6.5	7.0	7.0	19.0	10.5	15.5	20.0	5.0	3.0	1.0
Cathy	8.5	5.0	8.5	2.0	6.0	6.0	3.5	1.0	1.0	2.0
Louis	8.5	8.0	16.0	4.0	8.5	9.5	7.0	9.0	15.0	18.0
Judy	10.0	14.5	10.0	16.0	8.5	17.0	11.5	16.5	14.0	10.0
Joyce	11.0	9.0	11.5	13.5	12.0	7.5	11.5	6.0	5.0	7.5
Wendy	12.0	10.5	11.5	15.0	13.0	12.0	16.3	19.0*	18.5	14.0
Leona	13.0	16.0	15.0	17.0	14.0	13.5	16.3	10.0	10.0	13.0
Tony	14.0	13.0	8.5	11.0	17.0	15.5	19.0	18.0	18.5	16.0
Mary	15.5	12.0	14.0	5.5	10.5	11.0	15.0	2.0	6.0	11.0
Carl	15.5	14.5	13.0	5.5	15.5	13.5	8.5	8.0	11.5	17.0
Doug	17.0	19.0	19.0	18.0	15.5	18.0	16.3	12.5	13.0	9.0
Matthew	18.5	18.0	17.0	20.0	18.5	9.5	13.5	14.5*	16.5	19.0
Tim	18.5	17.0	18.0	9.5	18.5	19.0	6.0	7.0*	16.5	15.0
Dan	20.0	20.0	20.0	13.5	20.0	---	3.5	---	---	---

#Speech perception: L&L means Look and Listen
 LR means Lipreading alone
 *By conventional audiometry. Judged dysacoustic at Johns Hopkins

of deafness. These problems seem to have much in common with many of the problems of normal-hearing children with learning difficulties, and they need to be attacked within the framework of learning difficulties common to all children. The many and varied methods which have proved helpful with hearing children might also be adapted to help the deaf, methods of programmed learning, including, as suggested by some educators of the deaf, possible use of teaching machines and other devices to stimulate interest and promote self-teaching (Falconer, 1960; Schein, 1964; Stuckless, 1964). Within the oral tradition of education of the deaf it is possible, as Hardy, Pauls, and Hashius (1958) have suggested, that "a disproportionate amount of professional concern centers on speech rather than on the linguistic facility which must underlie, and precede, speech." Such language-learning problems are not peculiar to the orally taught deaf, however, as can be seen in reports by educators such as Stokoe, who writes of education of the deaf, in general,

If one objective of our profession is to teach the language of his culture to the deaf child, we have failed. Looking only at the top 10th of the products of our teaching of the deaf child, we can hardly see that we have tried. The language patterns of the other 90 percent hardly bear looking at (1964, p. 968).

He goes on to say, as does McCarthy (1964), that the educators of the deaf must look to the science of linguistics for help:

I believe we can foresee an era of explosive advance in the art of teaching the deaf child -- if only we have the good sense to become part of our scientific era (p. 971).

The recent report of the Advisory Committee on the Education of the Deaf has the same emphasis, beginning with the forthright statement:

The American people have no reason to be satisfied with their limited success in educating deaf children and preparing them for full participation in our society (1965, p. xv).

This report goes on to say:

The basic explanation lies in our failure to launch an aggressive assault on some of the basic problems of language learning of the deaf through experience or well-planned and adequately supported research, and in our failure to develop systematic and adequate programs for educating the deaf at all levels.

It seems clear, then, that this is not the time for educators of the deaf to argue longer about traditional differences in methods of educating the deaf, i.e., "oral," "manual," or "combined." These disagreements need to be examined impartially and by objective research methods, which has never been done adequately. In addition, methods of language-teaching which have been successful with the hearing need to be tried. Newer methods and experimental educational programs must be created to challenge the stereotype of the deaf individual as inevitably educationally retarded and linguistically limited. Once the deaf were considered hopeless idiots. Long ago we realized that the lack was not in them but in society. Probably it still is. With more intelligent and creative effort expended on their behalf, the deaf may yet prove that they need not be severely retarded in language development and academic achievement.

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Appendix A

CLARKE SCHOOL FOR THE DEAF¹

Personal and Family History

Child's name _____ Date of Birth _____
Home address _____
Mother _____ Age _____ Birthplace _____ Occupation _____
Education: High School _____ College _____ Other _____
Father _____ Age _____ Birthplace _____ Occupation _____
Education: High School _____ College _____ Other _____
Brothers and sisters:
Names: _____ Birthdates: _____ Hearing or deaf? _____
How many live in the home at present:
both parents? _____ children? _____ others? _____

Part I. Experiences and Characteristic Ways of Behaving.

- 1) In how many places has this child lived since his birth?
Where? _____ For how long? _____ City, town, or country? _____
- 2) Has he lived most of his life in a house or a city apartment?
Size? _____
- 3) Where has he been able to play freely?
Always with close supervision? _____ Any freedom to "roam?" _____
- 4) What special experiences outside the home has he had, such as
visits to the zoo, ship or airplane trips, marketing jaunts,
seashore, or other vacation experiences?
- 5) Does he sleep alone at home or share a room? If so, with whom?
- 6) How many different relatives, nurses, or maids have helped care
for this child? For how long? How old was he?

¹An adaptation of a questionnaire used at the Vassar Summer Institute.

- 7) What other schools, camps or play groups has this child already attended? When? For how long?
- 8) Does he have playmates at home? How many?
Ages? Hearing children?
- 9) What have been his special successes and difficulties in playing with other children?
- 10) What activities does he enjoy most at present? Earlier?
- 11) What are his most cherished toys or possessions at present?
Earlier?
- 12) Under what circumstances does he become most easily upset, or anxious?
- 13) How does he behave, or what does he do when he is upset, angry, or afraid?
- 14) What helps calm him, or makes him feel secure again, when upset?
- 15) What are the most important "do's" and "don'ts" in your family for this child?
- 16) What ways of enforcing family rules have you found most successful?
- 17) What adjectives do you feel best describe this child at the present?
As an infant? As a two-year-old?

Part II. Developmental History

A. Pregnancy and Birth.

- 1) How was your health during pregnancy?
- 2) Did you carry this child full term?
- 3) What was this child's general health at birth?
- 4) What kind of a newborn was he, that is, what were his most marked characteristics at birth?
Was he active? _____ moderately active _____ or quiet _____
- 5) Did he cry very frequently _____ a moderate amount _____ or rarely _____ during the first three months?

B. Food Patterns and Habits.

- 6) Was this child breast-fed? _____ For how long? _____
Bottle fed? _____ For how long? _____
- 7) What was his feeding schedule, i.e., or his own?
2 hours? _____ 3 hours? _____ 4 hours? _____ other? _____

- 8) Did your doctor recommend a "regular" schedule, or did he feel the schedule could be adjusted to this child's needs?
How did you feel about it?
- 9) How did this child accept the weaning from the breast or bottle?
How old was he? What did he do?
- 10) What were his special difficulties with new foods?
At what ages?
- 11) In general, which of the following adjectives describe this child's attitude toward eating now?
Eager _____ hearty _____ interested _____ not interested _____
changeable _____ fussy _____ choosy _____ other _____

C. Toilet Training and Habits.

- 12) When did you begin toilet training? How did you go about it?
- 13) How old was this child when he began to take responsibility for keeping dry at night? During the day?
- 14) How old was he when he began to take responsibility for having his bowel movements at the toilet?
- 15) Assuming that all children are under some strain over toilet training, how did this child reveal his concern about becoming clean and dry?
- 16) What did you do that helped him most in accepting responsibility?
- 17) Under what circumstances, if any, does this child still have difficulty with toileting?

D. Sleep Habits and Patterns.

- 18) Is this child at present a light or a sound sleeper?
- 19) At what ages did you have the most difficulty in helping him get enough sleep and rest?
- 20) What did he do that made sleep or going to bed a problem?
- 21) How early, and how often now, does this child seem to have bad dreams or cry out in his sleep?
- 22) Under what conditions at present does he go to bed most willingly and to sleep most easily?
Has he any favorite toys or comforting devices that he

still uses in going to sleep?

- 23) At what age did this child begin to suck his thumb or fingers? How long did this last?
- 24) If you did anything about it, how did you try to stop or limit his sucking habits?
- 25) How long and when did you use a harness, or a sleeping bag, or a snuggle bunny?

Part III. Illness, Accidents, and Family Incidents

- 1) What operations, accidents, serious or chronic illness have other members of the home had during this child's lifetime? How old was the child at the time?
- 2) Have any relatives or close friends of the family died since this child was born? If so, please give the cause of death, the age of the child at the time, and how you feel the child may have been affected.
- 3) Have any familiar members of the household left the home for any reason during this child's lifetime? How old was the child? How do you feel the loss affected the child?
- 4) What accidents has the child had? At what age? How did he seem to react and adjust at the time and later?
- 5) Has this child been hospitalized? If so, what was the reason, how old was he, how was he prepared for the experience, and how often were his parents permitted to visit him?
- 6) How does he seem to feel about doctors and hospitals and illnesses now?
- 7) Has this child been separated from his parents or others who care for him any length of time before he entered school? How did the separation appear to affect him?
- 8) What do you feel are the most difficult emotional adjustments your child has had to make thus far in his life?
- 9) What specific or general fears does this child have at present? Earlier?
- 10) In general, does this child recover from emotional upsets or anxiety with difficulty____, easily____, slowly____, fairly quickly____?
- 11) What helps him most to get his balance back after difficulties or periods of stress and strain?

Please add here any notes on this child's development or needs or interests which might help us in understanding him and making happier his adjustment to school living.

Appendix B

TEST INSTRUCTIONS AND CORRELATIONS BETWEEN INTELLIGENCE TESTS

Instructions and directions for each test administered were given orally but printed instructions were also used to make sure that each child understood what was expected of him. In the case of tests given when the children were in the first years of school, appropriate gestures or pantomime were used, e.g., for the Goodenough Draw-a-Man Test of Intelligence, if a child had difficulty understanding the request that he draw "a man" or "a daddy," a small toy figure of a man was flashed briefly before him and pantomime instructions of "draw" used.

For administration of the WISC when the children were about eight, printed or drawn instructions aided the oral ones. The Performance Scale was given first. With the Performance Scale subtests the tasks were usually self-explanatory but the Picture Completion and Picture Arrangement items usually needed some explaining. For the Picture Completion subtest, two illustrative examples were drawn by the examiner; a face without one eye and a rabbit with only one ear. Below each sketch was printed: "What is gone?" If necessary, the examiner pointed out the missing parts. Then, turning to the text pictures she said, "The same." The child either named the missing part or pointed to its locus, often using illustrative gestures. For the Picture Arrangement, the examiner used the fourth item, "Scale," for demonstration purposes after the child had arranged it, saying and pointing to the printed words "A story," doing the same with the standard demonstration item of "Fight." If the child had difficulty in understanding the task, the examiner would ask by words and gesture, "Which picture is first? second? third?" etc. In the writer's experience with young deaf children, the Picture Arrangement is usually the most difficult subtest to administer and often requires several demonstrations. Block Design and Object

Assembly were self-explanatory. With Coding the examiner tried to indicate the need for speed by pointing to her stopwatch and using the word "fast" and a gesture suggesting the same.

The Verbal Scale of the WISC was introduced by the following statement which each student read:

These next tests will be harder for you because you must give answers in words. You may answer by speaking or writing or both, whatever is easiest for you.

Most of these students preferred to speak, and only resorted to writing when the examiner was not sure of what they had said. A couple of the very poor learners used illustrative drawings to make themselves understood. Since the WISC Verbal Scale is not supposed to be a test of language, the examiner felt justified in simplifying the questions for both General Comprehension and Arithmetic, simplifications only of sentence structure, not of the essential problems presented. These simplified questions follow.

General Comprehension

1. You cut your finger. What is the thing to do?
2. You lose one of your friend's balls. What is the thing to do?
3. You go to the store to buy a loaf of bread. The grocer says he has no more. What do you do?
4. A boy (girl) much smaller than you hits you. What is the thing to do?
5. You see a train coming to a broken track. What should you do?
6. It is better to build a house of brick, not wood. Why?
7. Why are criminals (bad men) locked up in prison?
8. In a shipwreck women and children must be saved first. Why?
9. It is better to pay bills with checks, not with cash. Why?
10. It is better to give money to charity, not to a street beggar. Why?

11. Most government positions should be filled through examinations. Why?
12. Cotton fiber is used in making cloth. Why?
13. Why do we need to have senators and congressmen?
14. A promise should be kept. Why?

Arithmetic

1. If I cut an apple in half, how many pieces will I have?
2. John had 4 pennies. His mother gave him 2 more. How many pennies did he have then?
3. James had 8 marbles. He bought 6 more. How many marbles did he have then?
4. A boy had 12 newspapers. He sold 5. How many did he have left?
5. One cigar costs 7¢. What will three cigars cost?
6. A milkman had 25 bottles of milk. He sold 11 of them. How many bottles did he have left?
7. Four boys had 72 pennies. They divided them equally. How many pennies did each boy have?
8. A workman earned \$36. He was paid \$4 a day. How many days did he work?
9. One dozen oranges cost 30¢. You buy 3 dozen. How much change should you get back from \$1.00?
10. 36 is two-thirds of what number?

The Rorschach Test was introduced by the following printed instructions which each student read.

Ink Blot Test of Imagination

I am going to show you some pictures of inkblots. You tell me or write what these blots look like. There are no right or wrong answers. Everyone sees different things in the pictures. Most people see more than one thing in each picture. Just look at each picture and say or write as quickly as you can what it reminds you of.

A simple demonstration of how such inkblot pictures can be made was

given with a sheet of paper and blots of ink. With the first card, if the student stopped after one response, the question was asked, "Anything more?" but no further encouragement was given on this card or any of the others. An Inquiry was conducted in the usual fashion but no Testing of the Limits procedure other than the examiner's asking occasionally during the Inquiry if the student could see some popular response which he had not given spontaneously. Each student was asked at the end which card he liked best, which least, and why. If location of responses were not clear, the student often outlined it for the examiner and some few who had difficulty in explaining verbally drew illustrative sketches of their responses. In the great majority of cases the Rorschach presented no great difficulties with these deaf students except occasionally in the Inquiry and these difficulties may have been in large part due to the examiner's lack of experience in Rorschach administration.

Tables 5 through 8 (pages 169-171) present, respectively, 1967 and 1962 Stanford Achievement Test scores -- grade levels; final WISC scores; correlations of Leiter, WISC, and Peabody Picture Vocabulary Test scores; and correlations of psychological and speech test scores and Stanford Achievement Test scores.

Similar correlations between the mental test and the achievement test scores were computed for an enlarged group of 35, with comparable results. The Spearman Rank Correlation figure for Leiter IQ and Stanford Achievement Test median score was 0.75 significant beyond the 0.001 level. Correlations between the Leiter IQ and the WISC Performance and Verbal IQs approximately 10 years later were 0.71 and 0.55 respectively, both significant beyond the 0.001 level.

Thus, as other investigators have found, (e.g., Birch, Stuckless, and Birch, 1963) the Leiter Performance Scale has a respectably good power to predict academic achievement, at least as good as the predictive power of the Stanford-Binet and other similar tests of intellectual ability (Cronbach, 1960). The correlation figures are especially impressive when it is considered that there was a lapse of about 10 years between the Leiter and the achievement tests. The Stanford-Binet, for instance, typically shows correla-

Table 5. 1967 & 1962 Stanford Achievement Test scores -- grade levels.

Name	C.A.	Ed.A.	Par. Mng.	Word Mng.	Spell.	Lang.	Arith. Rsng.	Arith. Comp.	Soc. St.	Sci.	St.Sk.	Mdn. Gr.
Brenda												
1957	11-0	9-5	4.4	3.3	---	4.3	---	4.4	---	---	---	---
1962	15-10	13-9	7.4	7.6	10.0	11.0	9.7	8.7	8.1	6.8	10.0	8.7
Carl												
1957	11-0	7-9	3.0	2.7	---	2.9	---	2.4	---	---	---	---
1962	16-0	10-7	4.3	4.5	6.5	7.4	5.6	6.0	5.2	4.4	6.1	5.6
Cathy												
1957	10-11	8-4	3.6	3.0	---	3.3	---	3.3	---	---	---	---
1962	15-10	12-1	7.1	5.6	8.4	9.0	6.3	7.3	6.4	7.1	6.8	7.1
Doug												
1957	11-1	7-5	2.2	2.8	---	2.1	---	3.1	---	---	---	---
1962	16-10	11-1	3.3	3.4	6.8	7.2	6.3	6.4	5.0	3.3	6.1	6.1
Joan*												
1957	11-1	10-8	5.5	4.1	---	5.8	---	5.7	---	---	---	---
1961	15-0	15-10	8.5	7.0	11.9	10.8	11.0	11.2	8.1	6.1	11.1	10.8
John												
1957	11-4	8-5	3.4	3.5	---	3.2	---	3.5	---	---	---	---
1962	16-3	12-7	6.2	5.8	9.8	10.1	7.6	8.4	6.7	5.0	8.1	7.6
Joyce												
1957	11-2	7-8	2.3	2.6	---	2.3	---	2.9	---	---	---	---
1962	16-1	11-9	5.7	4.6	8.3	7.6	6.8	7.3	6.4	5.2	8.11	6.8
Judy												
1957	10-7	7-7	2.0	2.5	---	2.7	---	3.2	---	---	---	---
1962	15-6	11-3	4.3	4.8	7.1	7.4	6.3	8.8	4.1	4.4	6.5	6.3
Leona												
1957	11-11	7-5	3.2	2.4	---	2.2	---	3.2	---	---	---	---
1962	16-0	10-10	4.2	4.2	7.9	8.0	5.6	5.6	4.6	4.7	5.3	5.8
Louis												
1957	11-3	8-11	3.5	3.0	---	3.9	---	3.9	---	---	---	---
1962	16-3	12-6	6.0	4.0	7.5	9.6	9.3	10.1	5.3	4.3	8.5	7.5
Lucy												
1957	10-9	8-4	3.2	3.3	---	2.9	---	3.6	---	---	---	---
1962	15-8	12-3	6.7	6.8	9.1	11.2	6.5	7.1	7.9	7.3	9.4	7.3
Mary												
1957	11-8	8-1	3.3	3.1	---	3.2	---	2.9	---	---	---	---
1962	16-7	11-2	4.6	4.3	6.2	6.4	6.5	7.5	6.1	5.3	8.6	6.2
Matthew**												
1958	12-5	7-3	3.3	2.5	---	---	---	1.9	---	---	---	---
1962	16-6	10-1	3.6	3.7	5.4	5.8	5.1	6.1	5.0	3.9	5.2	5.1
Rita												
1957	11-0	8-10	3.8	3.2	---	4.4	---	3.8	---	---	---	---
1962	15-11	15-5	7.7	7.2	9.4	11.5	11.3	10.1	10.4	10.8	10.5	10.4
Ted												
1957	11-2	8-11	3.7	3.4	---	4.2	---	3.9	---	---	---	---
1962	16-1	15-3	11.0	6.8	10.5	11.0	12.7	12.2	10.7	7.9	12.0	11.0
Tim**												
1958	No Test											
1962	15-10	9-5	4.1	3.6	4.8	3.8	4.4	5.5	4.4	3.2	4.5	4.4

*Scores of 1961, as graduated a year early

**1958 test - earliest test available

Table 5. (Cont.)

Name	C.A.	Ed.A.	Par. Mng.	Word Mng.	Spell.	Lang.	Arith. Rrng.	Arith. Comp.	Soc. St.	Sci.	St.Sk.	Mdn. Gr.
Tony**												
1958	12-3	7-7	3.2	2.2	---	---	---	2.8	---	---	---	---
1962	16-4	11-2	4.5	5.6	6.2	6.7	6.3	7.5	5.2	3.9	6.3	6.2
Vicky												
1957	11-1	8-8	3.7	2.9	---	3.6	---	3.2	---	---	---	---
1962	16-0	12-7	5.5	6.1	7.6	10.8	9.0	7.6	5.5	7.6	8.5	7.6
Wendy												
1957	11-11	8-5	3.3	3.1	---	3.4	---	3.4	---	---	---	---
1962	16-10	11-9	5.5	4.6	8.9	8.7	6.8	7.4	5.8	4.7	9.8	6.8

**1958 test - earliest test available

Table 6. Final WISC scores.

Name	C.A.	V.I.Q.	P.I.Q.	Verbal Subtests					Performance Subtests				
				Inf.	Comp.	Ar.	Sim.	Voc.	PC	PA	BD	OA	Cdg.
Brenda	13-9	91	114	11	5	10	12	5	8	10	12	13	17
Carl	14-11	63	124	6	3	6	3	3	12	14	15	17	9
Cathy	13-8	82	135	7	6	10	7	6	15	11	18	17	14
Dan	15-0	50	104	4	1	5	0	0	6	10	10	19	8
Doug	15-9	63	97	6	2	7	6	0	9	5	12	10	12
Joan	13-5	96	132	11	7	14	10	5	11	12	19	16	15
John	14-2	76	94	9	6	6	7	3	10	14	7	5	10
Joyce	15-0	75	104	6	5	11	4	4	10	10	10	14	9
Judy	14-5	77	101	5	5	10	10	2	11	6	13	9	12
Leona	14-11	71	99	5	2	6	10	4	9	9	10	13	8
Louis	14-1	77	127	8	3	10	7	4	11	15	13	14	16
Lucy	14-7	96	107	10	9	10	10	8	10	11	11	11	12
Mary	14-6	76	124	5	6	8	9	3	13	14	13	17	10
Matthew	14-5	56	90	2	0	5	8	0	11	4	10	11	7
Rita	13-4	92	142	9	7	12	12	4	19	11	18	17	15
Ted	14-0	97	121	15	9	8	11	5	13	10	14	13	15
Tim	13-9	52	113	4	2	6	6	0	11	11	17	14	6
Tony	14-3	61	111	5	1	6	4	3	13	10	9	14	12
Vicky	15-0	81	113	6	8	6	10	5	13	12	10	14	10
Wendy	14-8	72	103	6	5	6	9	2	9	9	12	11	11

Table 7. Correlations# of Leiter, WISC and Peabody Picture Vocabulary Test scores.

	<u>WISC PIQ</u> <u>ca 7-8</u>	<u>WISC</u> <u>PIQ</u>	<u>CA 13-15</u> <u>VIQ</u>	<u>Peabody</u> <u>ca 15-16</u>
	r_s	r_s	r_s	r_s
Leiter IQ ca 5-6+	0.74**	0.75**	0.71**	0.67**
WISC PIQ ca 7-8		0.73**	0.55*	0.51*
WISC VIQ ca 13-15				0.85**
WISC Vocab.				0.82**

#Spearman Rank Correlations
 +One child was just seven
 *significant at 0.05 or better
 **significant at 0.01 or better

Table 8. Correlations of psychological and speech test scores and Stanford Achievement Test scores.

	<u>Stanford Achievement Tests</u>		
	<u>Median</u> <u>Score</u>	<u>Word</u> <u>Meaning</u>	<u>Paragraph</u> <u>Meaning</u>
Leiter IQ ca 5-6+	0.70**	0.52*	0.77**
WISC PIQ ca 7-8	0.62*		0.52*
WISC PIQ ca 13-15	0.62**		
WISC VIQ ca 13-15	0.93***		
WISC Vocab.		0.81**	
Bender ca 8-9	0.56*		
World Test	0.55*		

+One child was just seven
 *significant at 0.05 or better
 **significant at 0.01 or better
 ***significant at 0.001 or better
 N = 19 for all tests except the Bender where it was 18

tion figures in the low 70s with reading achievement, even when the tests are given concurrently. The predictive ability of any of these tests of mental ability is not high enough, of course, to make individual predictions reliably but, as Cronbach says:

One can neither predict behavior of a person knowing only his IQ nor make a sound prediction without using a good estimate of his mental ability (p. 180, 1960).

The Leiter Scale appears to serve a useful purpose, then, for deaf children on school entrance.

It is interesting that even test scores such as those of the Bender or the Integration Scores for the World Test play sessions appear to have some predictive validity for young deaf children's achievement. Also, it is obvious that whether one administers a so-called verbal test of intelligence or a test of academic achievement to a deaf student, one is measuring essentially the same capacities or achievements. With a much larger group of deaf students in their last year of school, the writer had consistently found the ranked scores for the WISC Verbal Scale and the Stanford Achievement Test scores practically identical.